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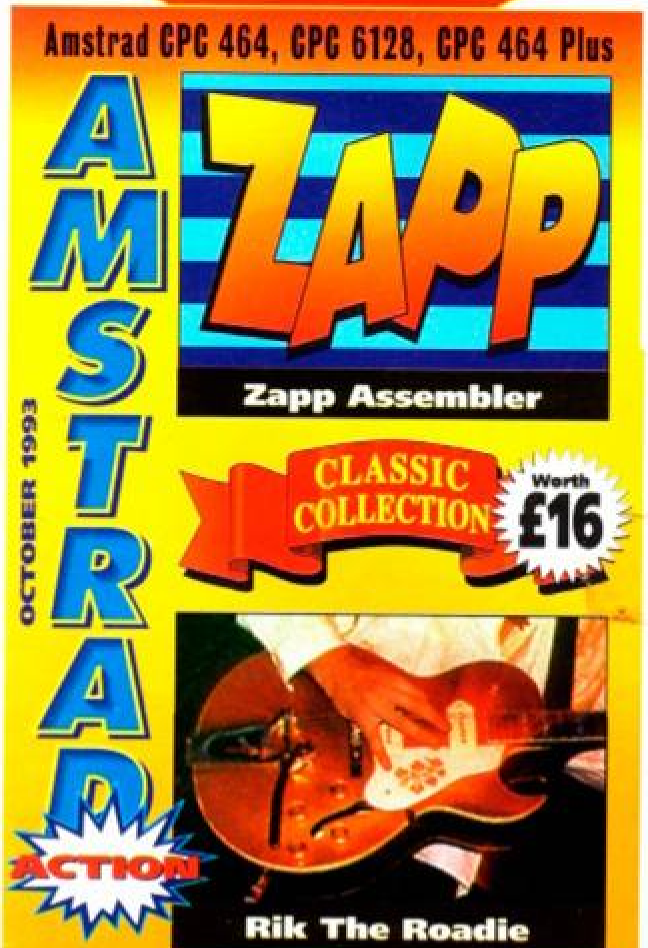
AMSTRAD ACTION

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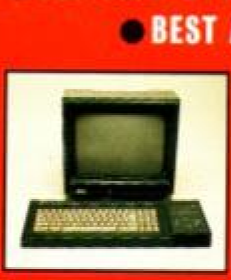
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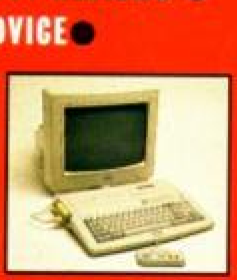


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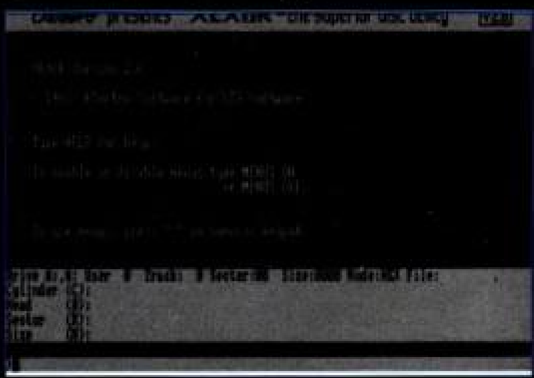


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Line-

Serious stuff



Strange things are going on down in STS land. Just who is selling the excellent Xexor now? You might find out on page 24.

Cover feature



Leisure zone



Klax gets the Power-Up treatment in this month's cartridge games round-up.

-up



Dr H Happening, bug exterminator extraordinaire, gives you the lowdown on debugging your Basic programs on page 30.



It's war on a galactic scale, so what better name to call it than Galactic Warfare?

CLASSIC COLLECTION

This event will live in history – the last ever Classic Collection. So cherish these two fab progs and prepare for big changes.

Zapp Assembler

1 Zapp! Blam! Kerpow! Holy ever-so-essential programming tool-type software. Zapp's an absolutely beautiful, action-packed, erm, Assembler, really, that'll help you turn into overnight into an amazing Machine Code programmer... well perhaps not, but it'll help. You can't program in Machine Code without an Assembler, and as Assemblers go, Zapp is one of the best. You'll wonder how you lived without it (probably).



Zapp! An Assembler that really packs a punch. Pow! Writing programs in Machine Code has never been easier.

Rik The Roadie

2 It's a hard life being a roadie. Rik knew he had a 200 mile drive to the next gig, but he still left the party at 5am and crashed out in the hotel. He woke up at 4pm with a stonking headache and the realisation that he had to get the band to Norwich, set up the equipment and do the sound check in less than three hours. Can he manage it? That's up to you.



Have all the fun of driving around a bus load of pot-bellied rock stars with constant hangovers in Rik the Roadie.

Just turn the page for all the details →→→



Zapp Assembler

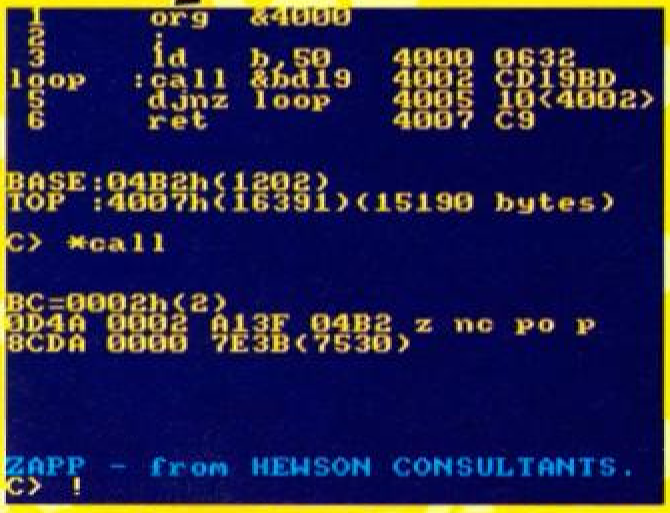
© 21st Century Software

On the trail of truth, justice and the Machine Code way, Simon Forrester gives you all the info you need to use this month's excellent serious Classic Collection package.

Right. So we've got an Assembler, have we? What's it actually good for? Well, Machine Code, really – the language that lets you truly unleash the power of your CPC. You see, Basic really is, well, basic, only letting you do all the really boring stuff like print things on the screen and read for keypresses, etc. What you need is a bit of Z80 code coursing through your veins so you can get in some serious coding.

So we figured that for everyone out there who either couldn't get on with *Devpac* (the Assembler we gave away a year or two ago), weren't reading *AA* that far back, or had a rabid creature that ate their covertape (it happened to me, but I've split up with her now), we thought we'd give you a copy of the Assembler that nurtured many coding lives to maturity (well, mine anyway).

So load it up! You'll be presented with a screen that, let's face it, looks really boring, huh? Let's fill it up with a few lines of program. Don't worry – all you have to do is type in the following program line-by-line at the text input thing at the bottom of the screen, and watch your program appear at the top.



The Assembler assembles, and you can use the CALL command to jump into your code. Note the breakpoint.



"What's a breakpoint?" you ask. Well... I don't think I'm going tell you!

```
org &4000
;
ld a,7
call &bb5a
ret
```

Now what you need to do is turn that into numbers the computer can really understand, so type:

```
*asm
```

Looks technical now, doesn't it (see fig 1)? Now your program looks like something vaguely resembling a lot of numbers. You run it by typing:

```
*call
```

Wow! It beeped! Don't you feel great? Your first Machine Code program, and I only helped you a little bit! (*Simon, I know I told you to make it comprehensible to newcomers, but you don't have to treat them like they think* Beadle About's *a stimulating experience – Dave*).

So what more do you need to know? From now on, all Assembly listings in the mag will be *Zapp* compatible, but let's get on with a more in-depth look at the package. First, then, the Assembler directives.

Assembler directives

Assembler directives are instructions that sit in your source code file that don't get converted straight into numbers, but just give the Assembler instructions about what to do. So let's take a look at a few:

● `org`

This tells the Assembler where to place the Machine Code routine within memory (it's short for 'originate'). Anyhow, in the short listing you typed in earlier, the code sits at memory address `&4000` (hex numbers are explained in this Month's Assembly Line which starts on page 20, by the way).

● `defb`

This directive is used for placing numbers sequentially directly into memory. For instance, the line:

```
defb &11,&7e,&4f
```

would place the bytes `&11`, `&7e` and `&4f` consecutively in memory.

● `defw`

This one is very similar to `defb`, but instead of placing individual bytes into memory, it places words into memory. A word is a 16-bit number made up of two bytes, that is stored in memory low byte first, so that the instruction:

```
defw &4e75
```

puts the bytes `&75` and `&4e` consecutively into memory (but remember kids, it's low byte first!)

ZAPP Commands

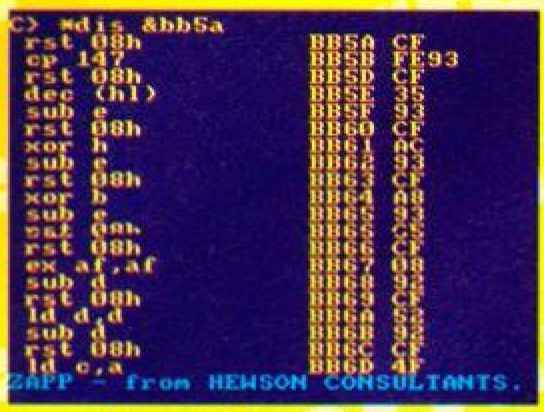
These are commands that don't end up in your listing, but give direct instructions to the program. If you're having trouble with the distinction, then there's a very clear way to define the two – whereas directives will make the Assembler act in a certain way when the source code is assembled, *Zapp* commands make the program do something straight away. All of the commands are preceded by a star:

`*asf <<filename>>` – This assembles your listing to a file.

`*asm` – Oh please! I'm not going to insult your intelligence by explaining that this command turns your source file into a Machine Code-style program. Oh pooh.

`*asr <<filename>>` – Placing your cursor at the required point in the program, and typing `*asr <<filename>>` without any speech marks enables you to paste chunks of code into your listing.

`*bye` – This command will simply drop you out of the



Sorry – I haven't had much sleep. Anyway, this is the disassembler. Technology, huh?

program and back into BASIC. To jump back (yet again) into *Zapp*, all you need to do is type `CALL 36000`.

`*call` – Dead simple. When you've assembled your code, just use this command to run it. Wow, huh?

`*cat` – Equivalent to Basic's CAT command.

`*dis <<addr>>` – Disassemble memory at the specified address.





Learn Machine Code, and you can turn out stuff like the grab on the left (it's one of Simon's by the way – Dave). Try to avoid writing something dull like Zap'T'Balls though, or I'll be 'round.

`*hex <<addr>>` – A hex editor, which is a bit complex. We'll cover that next.

`*lcd <<filename>>` – Load a Machine Code file into memory.

`*lsr <<filename>>` – Load a source code file into the Assembler.

`*scd <<filename>>` – Save a Machine Code file to tape/disk.

`*ssr <<filename>>` – Are you serious? Read the last three explanations and work it out for yourself! (*Erm... saving source code? – Dave*) (*Even I got that sussed! – Andy*).

The Hex Editor

(*Wow! A full hex editor and everything! – Dave.*) Right. (*Er, and what exactly is a hex editor, then? – Dave.*) A hex editor is a utility that allows you to examine and alter memory byte by byte. It's dead simple to use as well.

To just look at memory, use the command `*hex &4000` (this leaves you looking at the eight bytes at `&4000`). To view the next eight bytes, simply hit RETURN (or ENTER).

There comes a time in everybody's life, though, when they just have to alter memory. So, once you've got the machine into hex editor mode (signified by the `H>` prompt), enter the address that you want to edit. You'll then be presented with the address, the contents of the address and a prompt enabling you to enter a new value.

If you don't want to enter a new value, simply press RETURN to pass on to the next address, and if you want to alter a value before the address shown, just press the Cursor Up key.

The Disassembler

Now, there may come a time when you want to examine memory, and turn the numbers back into Assembly language so that you can check them over. Let's say, for example, you want to disassemble the Machine Code that starts at the memory address `&bb5a`. Load up *Zapp* and type `*dis &bb5a`.

As you can see by the huge amount of text scrolling past, there is already some Machine Code there (it's an area of memory used by the internals of the CPC – check out this month's Assembly Line on page 20).

You might want to pause the listing though, so press ESC once. Now press any other key to get the listing moving again. If you were to have pressed ESC twice, the disassembly would have stopped altogether.

'Til Next Time...

Well, as you're probably aware by now, this package winds down the final chapter of the *AA* Classic Collection. However, now that you've all got an Assembler, there are a few things you can do. First, you can send along your Machine Code source listings for inclusion in Type-Ins, or, failing that, for inclusion on one of the many reader-orientated covertapes that'll soon be heading your way. So go on, impress us. 'Til then it's bye from me...

Keypresses

Well, there is slightly more to the source file editor bit than meets the eye, but a few handy keypresses should help you out:

UP – Pressing the Cursor Up arrow will move the red listing highlight up one line, shifting the insertion point.

DOWN – Need I say more?

LEFT – Takes you back one page.

RIGHT – Takes you forward one page.

COPY – Lets you edit the line currently indicated by the cursor.

DEL – When immediately followed be CLR, this deletes a line.

Before you load up read this bit

Just pop the tape into your machine, making sure it's rewound to the start of side one, press CTRL and ENTER (or type RUN""), then press any key and the tape will start loading.

You'll need to load each side separately, but this month, and unfortunately there is no tape-to-disk transfer program on the covertape this month.Using the token at the bottom of this column, though, you can send off to Ablex for a working disk copy.

The tape won't work? Surely not?

We go to great lengths to make sure that our covertapes work properly. However, if you still have difficulty, try these solutions:

- Loading at several different volume levels (if you're using an external tape recorder).
- Cleaning the tape heads. This can be done with any commercially available cleaning kit.
- Adjusting the cassette recorder's head alignment. The alignment screw is located just to the left of the tape head, and is usually accessible through a small hole. Turn it a fraction at a time with a jeweller's screwdriver. When the crispest sound is heard, the alignment is spot on.
- Tapping the cassette GENTLY against a table edge – the spools may be sticking or jammed.

If you still can't get the tape to load then send the tape, along with a brief description of the problem and a stamped SAE to:

AA97 Covertape Returns, Ablex Audio Video Ltd, Harcourt, Halesford 14, Telford, Shropshire TF7 4QD

But I want a disk version!

Tough!

What was that Dave? Oh okay then, I'll be nice to them for once. We're really very sorry about this, but this month's tape won't be transferable. This isn't due to the nature of the program – so if you've got a tape-to-disk utility, you're perfectly welcome to transfer side A – but due to timing constraints and legal reasons, we really can't supply you with one.

If you've got a disk drive, though, and you really feel the need, you can order a disk version of the covertape from our duplicators, Ablex. Snip off the coupon on the corner of this page and send it with a cheque/PO for £2.00 to:

AA97 Disk Offer, Ablex Audio Video, Harcourt, Halesford 14, Telford, Shropshire TF7 4QD

Please don't return tapes to the AA office. Ever! If you dare, we'll just feed them to Simon, and when you ring up to see where it's got to, we'll just make you feel stupid for not reading this bit in the first place. You have been warned!

Disk 97 Token

Rik The Roadie

Rock'n'roll! Dave squeezes into his leather trousers, back combs his hair, pouts a bit, sticks out his chest, looks ridiculous and finally remembers that he's supposed to be telling how to play the game...

"One... two... one... two... two, two, two..." How come roadies can never count to three? Probably because they're so whacked out. Life on the road with a rock band can be hard, but not for the band. They just strum and bash for two hours a night, party 'til 5am, crash out, get carried to the tour coach the next morning, get driven to the next venue, get woken up after somebody else has conducted the sound check, climb into a new set of clothes then stagger on stage again.

But the road crew, they have a tough life. Especially Rik. In fact, Rik is the road crew for his band. He has to drive the from gig to gig, cart about all the equipment and conduct the sound checks.

But the life has its silver linings – and not just the tasteless seat covers in the tour bus. There are the girlie groupies who flock around him because they thought he had access to the band (actually the band could never remember his name – then again, they usually had problems remembering their own). There's the foreign travel. There's the money. There's the chance to drive at 127 miles an hour down the motorway.

Oh yeah, speeding. That reminds me – I'm supposed to be telling you about the game. Right, it's in three parts. The first section is a frantic drive in the tour bus down the motorway to the gig. Try to avoid crashes because they're so inconvenient and slow you down.

In the second part you have to carry the equipment into the venue without dropping it. In the third you have to set the sound levels, making sure they don't get too high or too low. You have a time limit within which to complete all the tasks, so the quicker you get to the gig the more time you have to complete the trickier second and third sections.

And when you've done it all once, you start again, this time with a tougher time limit. The band probably overslept again.



Keep out of the green and into the red, you get a Sun exclusive for three in a bed.



Rock bands have never exactly been known for their cultured tastes, but a pink tour bus? I bet it's got leopardskin curtains.



In the second section Rik has to carry the equipment from the van into the venue.

Complete control

Stage 1

Joystick	Operation	Keyboard
Left	Go left	O
Right	Go Right	P
Forward	Accelerate	Q
Back	Brake	A

Stage 2

Waggle the joystick left and right to get Rik moving. Rhythm is as important as speed.

Stage 3

Keep the levels in the red.

Joystick	Operation	Keyboard
Forward	Power up	*
Back	Power down	?



The high score table takes the form of a hideously out of date Top Of The Pops chart, but at least there's no blimmin' techno... techno... techno... techno... in there.

Hold on to your hats – The Blues Brothers are coming your way in AA98

We're on a mission from God, to bring you the most amazing covertape ever. So next month lovingly Sellotaped© to the cover of Amstrad Action there's going to be something a bit special. Scratch that, and make it, something amazingly brilliant.

We've got for you the complete, unabridged, uncensored, epic-sized, director's cut of the platform extravaganza, The Blues Brothers.

You get to play Jake or Elwood, as they storm their way though five massive levels, creating chaos and bringing rhythm'n'blues to the uncultured masses.

And then from issue 99 onwards the covertape is going to take a whole new exciting direction with:

- **Bigger, better games**
- **More programs**
- **The best PD utilities**
- **Programs written especially for AA covertape**
- **And other bits'n'bobs**

It'll be a revolution in cover mounted give-always, so make sure you don't miss out. Subscribe to AA now or get your newsagent to reserve you a copy every month. It could change your life (probably).

Amscene

What's hot and not what's not on the CPC news front.

Party time!



What's the secret behind the smile? Expensive dental work?

Yup, this is officially *AA*'s eighth birthday. And we look pretty good on it, I reckon – well, apart from Simon, who looks like he's been celebrating a bit too heavily.

But we have to save ourselves for the big celebrations; issue 100 is nearly here. You've already been sending in some great suggestions about what we should put in the issue (apart from P Greenhill of Sudbury – if we did that Smith's wouldn't stock us). It'll be an absolute stonker.

Plus, there are some big changes coming to the covertape pretty soon. See the tape pages for news on next issue's big news, but from issue 99... hah, just wait.

Stop press! STS Split

Three of the leading members of STS, one of the largest and most respected CPC hardware and specialists, have split away from the group to form their own company. Matt Gullham, Richard Wilson and Daniel Healy have set up Quantum Computing, and are selling many of the products previously sold by STS. Full details on page 24.

Blatant Plug!

Anyone searching for blank 3-inch disks might like to know that Tim Blackbond, *AA*'s own PD blokey, is flogging them off for £1.20 each. How can he sell them so cheaply? Well, the disks aren't brand new, but are freshly formatted and have a brand spanking new label. Postage and packing is included in the price. Tim can be contacted at 19 Lee Street, Liversedge, West Yorks, WF15 6DZ.

MoonShine

We recently received a letter from 'The Beast' of MoonShine PD (*Oh no! It's another adventure fan with a ludicrously cheesy name! – Dave*), asking anyone who's written any new adventures to consider sending them in to his library for PD distribution. The address is MoonShine PD, 19A Kenyon Ave, Wrexham, Clwyd, LL11 2SP.

Calling Sussex

News has reached us of a Sussex-based group called Amstrad Contact, which is offering *Bonzo* updates, transfers for *AA* covertapes, hints'n'tips, and just about anything else that'll help the CPC scene along a bit. As well as this, there's a Sussex-based personalised help service. Call Dave Moggeridge on 0403 757348 – this looks like the start of something big.

Stop Making Sense

If you have trouble telling your hex from your binary, or your RAM from your ROM, face it, you're just not computer literate. But don't feel you have to hide in the kitchen at parties, because a new book has just come out which means that you'll be prattling on in computer jargonese like a good'un in no time. *Making Sense Of English In Computers* by Geoff Wilkins costs £5.99 and you should be able to get it in all decent bookshops.

The book's aim is to provide a guide for the 'computer illiterate' so they can survive the modern world. It covers everything from the origins of techy phrases to artificial intelligence, so it could be useful even to old computers hacks.

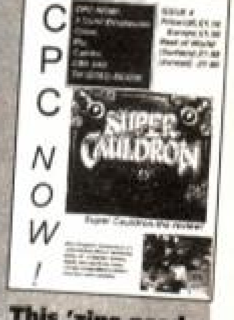
Could you do this job?

The CPC fanzine *CPC Now!* is on the look-out for two sorts of writers – programmers and budding journos. The fanzine itself is currently short of a deputy editor and needs someone to fill the position. Editor James Hockney is also interest in hearing from any games programmers for some exciting future developments.

Issue four of *CPC Now!* is now available, so you can see if they agreed with us about *Super Cauldron* and *Wrestlemania*. The £1.10 fanzine is a bi-monthly and concentrates more on the gaming side of the CPC.

***CPC Now!* is also selling *Ginormous* packs, each of which is a compilation of 20 games, at a special price of £5.50 plus postage.**

So if you reckon your writing abilities – in either capacity – could be just what *CPC Now!* is looking for or you just want to order a copy, get in contact by writing to: 3 St Ethelwolds Close, Ely, Cambridgeshire, CB6 3AX or ringing James on 0353 663030. It could change your life.



This 'zine needs new writers.

GamesMaster to broadcast live from FES



The latest on Future's Four-Day Computer Games Extravaganza at Earls Court in November is that Channel Four's *GamesMaster* TV programme will be broadcast live from the Show on the Thursday. It'll be hosted by Dexter Fletcher, who's taken over from Dominik Diamond. Know the name from somewhere? Yep, he's the one with the stupid American accent in the utterly superb *Press Gang*.

Radio One will also be broadcasting every day from the Show, which takes place from 11th to 14th November. The Radio One Roadshow van will be there, but which DJs will be on hand has not yet been announced (though you can bet it won't be DLT).

There'll be all the latest Sega and Nintendo games there for public playtesting – you can play 'em in other words – as well as loads of CPC-related companies, such as Core, Datel and Siren. Plus (we've just heard) a 40 foot inflatable Sonic.

Remember you can only get tickets in advance – there will be none on sale at the door. Tickets cost £6.95 per day and you can get them by phoning the FES hotline on 051 356 5085. And, get this, anyone who buys a ticket for the Friday gets a free ticket to see Disney's latest animated masterpiece *Aladdin*, which features the voice of Robin Williams as the Genie (Dave's seen it and reckons it's superb).

The Amscene Directory



Hey, something new. Yup, it's *AA*'s directory to everybody who's anybody in the CPC scene (well, everybody we can remember, anyway). If you think your club/group/fanzine/service/recipe for banana milkshake should be included in the directory drop us a line (we might ignore it, but that's a chance you take – it's not like we're asking you to pay) at Direct A Tory, *Amstrad Reactionary*, 30 Monmouth Street, Bath BA1 2BW. We've missed out most of the PD libraries around, as we'd be here all day otherwise, but you'll find a library round-up in this month's Public Image (page 54). Anyway, here we go:

Ablex Audio Video Ltd
☎ 0952 680131
They're the guys who supply the solar system with *AA* covertapes, so if you've got a dodgy one, these are the people to contact.

Adventure PD
☎ 081 310 9877
Probably the only PD library devoted mainly to adventures, and it's run by *AA*'s very own adventurous Debbie Howard.

Alternative Software
☎ 0977 797777
A budget software house – 'nuff said (*except that they've got a new game on the way soon – Alvin and the Chipmunks – Dave*).

Avatar
☎ 0442 251705
Suppliers of Phil Craven products, and a few of the Bonzo titles (and don't ask what Bonzo titles are – it'd take too long to explain).

BoxForm
☎ 051 336 2668
A software house specialising in, would you believe, betting software. It takes all sorts in this world.

Campursoft
☎ 041 554 4735
You name it, they do it, really – take a look at the interview in ish 96.

CodeMasters
☎ 0926 814132
Home of the truly repetitive *Dizzy* series – can we forgive them? Well, yeah, actually.

CPC Now!
☎ 0353 663030
Check out the news item opposite for further details.

Dartsma
☎ 081 317 1170
Suppliers of custom leads, computer stationary, hardware, clip art, public domain, and some good original titles.

Gary & Scott Kennedy
☎ 061 736 1204
Authors of *Trakers*, a truly great CPC game (don't argue).

Gremlin/GBH
☎ 0742 753423
Another budget software house – famous for the fabby *Shoot-'em-up Construction Kit*.

New Age Software
☎ 01049-711-4201920
Responsible for the dull *Zap'T'Balls*, the excellent *Soundtrakker*, and hopefully a few more titles.

Ocean/Hit Squad
☎ 061 832 6633
A software house – 'nuff said.

Pipeline Software
☎ 0656 740741
Original authors of the excellent machine code tutorials – see ish 91, and a follow-up this month.

Quantum Computing
☎ 0446 746920
The new breakaway sect of STS that looks set to pick up where the original good plans fell short.

Romantic Robot
☎ 081 200 8870
Creators of the Multiface – There's a complete list of cheats in *AA*90.

SD Microsystems
☎ 0760 720381
Specialists in business software – take a look at the feature in *AA*93.

Sentinel Software
☎ 081 876 7032
Suppliers of selected STS titles (probably Quantum titles, now), and a few original products.

Sheepsoft
☎ 0446 736529
A Welsh PD library that's perfectly happy to sell you selected STS titles.

Siren Software
☎ 061 724 7572
It'd take a hell of a time to list everything they do – check out their ad (it's the yellow half-page one).

Titus/Fox Hits
☎ 071 700 2119
Home of *Prehistorik 2*, *The Blues Brothers* and quite a few more.

Touchdown
☎ 0268 541126
Budget software house – 'nuff said.

Trading Post
☎ 0952 462135
Yet another mail order house, great for cart games (see page 42).

Trojan ☎ 0554 777993
The people to speak to for cartridge and lightgun stuff.

UAUG (United Amstrad User Group)
☎ 0329 234291
An *AA* recommended user group.

US Gold/Kixx
☎ 021 356 3388
A software house – 'nuff said.

Virgin Interactive Entertainment
☎ 081 960 2255
Don't be fooled by the 'Interactive Entertainment' bit – it's still Virgin.

WACCI ☎ 0602 725108
A small fanzine that seems to have something major against *AA* (why, we're not quite sure – I you discover why, let us know).

WAVE ☎ 0229 829109
Suppliers of loadsa good stuff – their ad is on the back cover.

Zeppelin Software
091 385 7755
Though they've pretty much left the CPC, they've still got a few titles floating about the place.

AA98 might contain £1,000

...but it might not. Are you prepared to take the chance? If not just fill in the form over to the right there, and slip it to your newsagent, who'll reserve you a copy. And you might be lucky (but probably not).

MAG*SAVE

Remember, remember the Amstrad Action's out in November, and I want a copy.

Dear Newsagent, could you please order me a copy of *Amstrad Action*, starting with the November issue, which'll hit the shelves on October 28th. *Amstrad Action* is published by Future Publishing (the lot that do *Edge*, you know), and you can order it from your wholesaler. Thanks.

My name ....

My address ....

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This is what graphical datalooks like, by the way.

Battle of the sprite searchers

Simon gets a grip on sprite ripping and tries to write an entire page without mentioning what else TUSS could possibly be an acronym for.



It's really strange – as soon as I hear about someone who's come up with something new for the CPC, you can bet that someone's going to send in a rival package within about three days. So when I received *Gripper* for review, I thought I'd give it a week until I wrote the review, just in case. And lo and behold, a couple of days later along came *TUSS – The Ultimate Sprite Searcher.*

The main aims of both packages are identical; to allow the user to load files from original games and rip out/alter the graphics for their amusement. Oh ick, my 'Future Publishing getting loads of complaints/letters from lawyers' sensor has just exploded, so for the peace of mind of half a dozen publishers, ten or so directors, and a hundred or so journos in fear of their jobs, please find the boxout on this page titled 'Mind Your Head'.

Aah, with the needle back down to a safe limit, I can continue to talk about ripping sprites, altering game code and loads of other things that'd make a publisher's hair curl.

The idea of these two packages is that somewhere along the line, somehow, you might just want to rip graphics out of a piece of software. Why, I'm not quite sure, but apparently there is a need, far be it for me to raise the question of actual point.

The basic operation idea is simple – you provide the game and use either package to wrench out the sprites. The technical side will be boring to most of you, but if you really want to know, the idea is that you move through memory, with the package displaying the sprite represented by the data sitting from that memory address onwards, allowing you to set your specified width, length and ink values.

How do the two packages compare? Well, this is where things get a little difficult, because *Gripper*, as well as being a sprite ripper, is also a disassembler, editor and quite a bit more.

Anyway, on with the show, and ease of use. There's a huge difference between the two packages. *Gripper* is based on a menu system and needs virtually no instructions whatsoever. All it needs is a Multiface file on a disk and it'll do the rest, no fuss. For the technically-minded, more in-depth details are provided about the files, but anyone who just wants to rip off sprites (Gawd bless 'em) shouldn't have too many problems.

TUSS comes in several files, which can be loaded into either 64K or 128K machines, either independently, via *HackIt*, or into your Multiface. A word of warning here; this kind of set-up is a little complicated, so if you're not well up on the technical side of things, you could run into trouble.

To be quite honest, there's not really much else I can tell you about the job the packages do – all I can do for you now is reveal which one I think you should buy. First, we'll deal with those of you with only 64K machines. Hello, 64K peeps. Sorry 'n' all, but you have no choice. *Gripper* is 128K only. But hey, think of it like this; you don't have to waste all that valuable time deciding which one to get!

Do we have any 128K owners here tonight? There they are, let's have a big hand for the 128K lads. That's right, ladies and gents, they have the choice of which ripper to buy, and here at the Club Hairy, we want everyone to have a really great time, so they should consider the following points.

- *Gripper* requires little or no background technical knowledge, whereas *TUSS* will need a hell of a lot of co-operation from you.
- *Gripper* also contains a full memory editor, disassembler and, get this, a sprite editor! Wow, and indeed, wow!
- However, *TUSS* is the one to go for if you don't have a Multiface – *Gripper* prefers to work with Multiface files, whereas *TUSS* has that extra versatility to work with just about any type of file you care to throw at it.

To be quite honest here, if you've got 128K, get *Gripper*. Thank you and goodnight. **Simon**

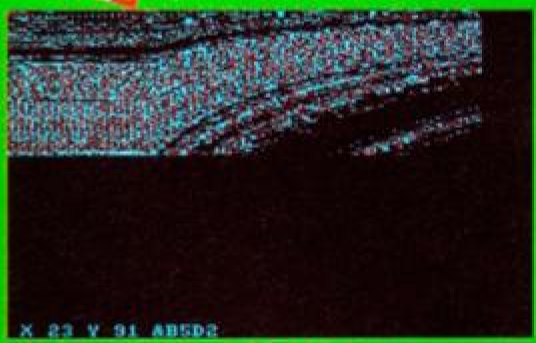
Mind your head

Let's be perfectly honest here – ripping sprites out of games and passing them off as your own is illegal. If you intend to use anyone else's graphics in your own work, you must get their permission, or you may end up standing in a civil court whilst people mutter words like 'sue' under their breath.

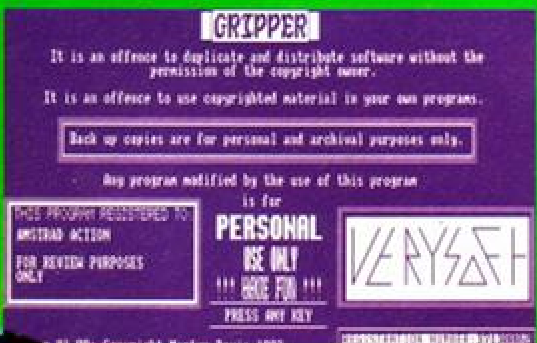
Remember kids, legal action is not clever, it's not funny and nobody's impressed. Ripping sprites is for your own personal enjoyment only. Got that? Good.



It's only really up to screens like this to bring down the party atmosphere with a monumentally technically competent thud.



The whole activity of stealing sprites gets pushed to the background when you see all the lovely swirly patterns you can make.



And here we see the ancient ritual of the unnecessarily heavy disclaimer.

The info bit

TUSS £7.99 Sentinel Software
41 Enmore Gardens, East Sheen, London, SW14 8RF ☎ 081 876 7032.

Gripper £15.25 Verysoft
450 Roughwood Road, Wingfield Estate, Rotherham, S61 4LA.

Both packages are on disk only – sorry tape owners, but hey, that's life.

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ORDERS UNDER £5.00 ADD 50p POSTAGE + PACKING. CHEQUES + POSTAL ORDERS MADE PAYABLE TO WIZARD GAMES.
PLEASE ALLOW 7 DAYS FOR DELIVERY.

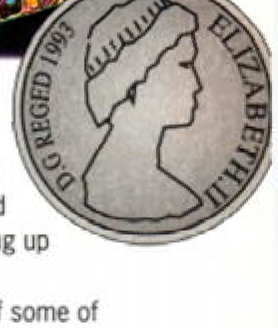
Smashing value



How do 10 games for the price of one sound? Or accounting software that'll leave you enough change from a fiver to buy luxuries like bag of chips. If you've got a CPC, it can be done. Simon Forrester and Dave Golder round up the best games and serious software that'll set you back less than a fiver.

Let's face facts; you have to be either mad or stinking rich to spend £45 on a game, but thousands of console owners do just that. Sure the games look smart, but loads of them aren't much better than the best stuff you'd find on the CPC in terms of gameplay. And you can pick up classic CPC games now for £3.99 a piece; that means you could buy 11 CPC games for the same price as one SNES cart. And is your average SNES game 11 times better than *Rainbow Islands*? I think not (personally, and I'm being perfectly serious here, I still prefer a decent bash at *Rainbow Islands* to *Star Wing* any day, but that's just me). So us lucky CPC owners are getting a much better deal.





So what is a budget game? Well, if you look through recent issues of *AA*, you'll notice a few full-price titles, such as *Prehistorik 2*, *Super Cauldron* and *Trakers* being reviewed. Back in the dim and distant days when the CPC was a really popular machine, there were a lot more of these titles about. However, the market, as you probably know, went into a slight decline, what with the introduction of consols on to the market, causing the sales of CPC software to drop, which in turn discouraged the software houses from commissioning any more CPC titles to be developed.

Silver lining

This, though saddening, did not kill the CPC market. If anything, it made it more accessible to CPC users. The way that the commercial software industry combated this problem, you see, was by re-releasing old full-price titles in smaller, less glossy packaging, usually on cassette. And lo, the budget title was born.



This isn't the only reason for releasing budget titles, though, as many software houses found it was a way to catch customers a second time 'round who may have been dissuaded by the rather hefty price tag on some software.

Whatever the reason, however, this idea really seemed to catch on, with most software houses who had an interest in the CPC market, US Gold and Ocean to name but a few, setting up their own budget labels – Kixx, and Hit Squad respectively, in case you wanted to know.

And the budgetisation (for want of a real word) process doesn't look as if it'll stop here. You see, with the major full-priced commercial market slowly sinking into the west, we can look forward to a whole load more titles showing up on budget labels – personally, at *AA* we're waiting for re-releases of some of Titus's latest stunners.

But it has to be admitted that just because a game is cheap doesn't necessarily mean it's worth risking your money on (and while I'm on the subject, avoid *Mercs* like the plague, okay?). That's why we're giving you the *AA* lowdown on the essential games to have in your collection.



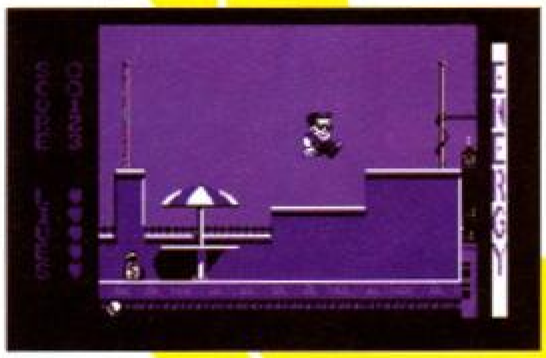
And think about this... if you bought every game listed in the following top 10, you still wouldn't have spent as much as you would on *Mortal Kombat* for the SNES. Aren't you glad you've still got a good old CPC? →

Budget game top 10

Here we go then, with the definitive guide to the 10 best ever budget titles you're likely to see this side of the Caspian Sea. All of them cost a measly £3.99 so if you haven't got any them, get 'em now. And that's an order.

Hudson Hawk (Hit Squad)

Probably the first game I ever reviewed on my arrival at *AA* (Simon here – 'Hi'), *Hudson Hawk* is, to say the least, fun. You play the part of the black-clad Bruce Willis (only in this version he's blue), on a quest to steal loads of goodies and escape with his life, his freedom and a year's supply of scampi fries. There's loads to explore, oodles of puzzles to solve and a huge variety of villainous bad guys to avoid, destroy or probably steal. More importantly, you have the ability to run and skid about which, as far as I'm concerned, really makes a game.



Hudson Hawk – it's all just so blue, really. Things flash blue and blue alternatively.



Okay, so let's just think about this for a minute; I'm a detective bloke in jeans, a T-shirt, and Dr Ms, stealing a motorbike?

OutRun Europa (Kixx)

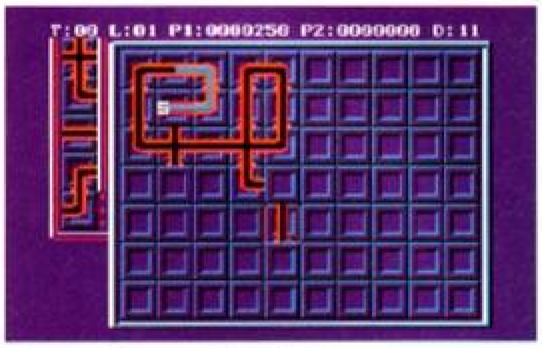
In *OutRun Europa*, you play the part of a blokey who, for some inexplicable reason, is chasing criminals who've stolen his briefcase. Get this – he chases them by stealing a motorbike and engaging in a high-speed chase. If you rewind that sentence, you'll notice the bit about stealing the bike – hypocrite, or what? Is this what we should be teaching our kids?

Despite the slightly crooked morals of the good guy, this is a lovely little chase-'em-up. For a start, it's not just restricted to one vehicle – during the chase you'll find yourself on a bike, in a car, on a jet ski and in a NASA shuttle (*are you quite sure about that last one? – Dave*).

Okay, so it is only a driving game, but as driving games go, it's definitely the best you'll find around today.

Pipemania (Touchdown)

Now we're cooking with ooze. That's right, I said 'ooze'. The idea of *Pipemania* is to fit loads of pipes together, so that you can channel the flow of ooze for as long as possible. Oh, I really can't be bothered to explain it all just here, so take a look at the grab and work the rest out for yourself. The bits you can't really see from the picture



Pipemania, one of the best puzzle games of all time.

Some serious savings

It's not just games that come out on budget – what about those odd titles that might just do a little more than make pretty noises?

Mini Office

Mini Office is undoubtedly the best serious budget title around at the minute. It's available from Alternative Software, and consists of a good few packages, such as a word processor, a database, a spreadsheet and more besides.

You can get hold of a copy for a mere £3.99 from Alternative Software, Units 5-7, Baileygate Industrial Estate, Pontefract, West Yorkshire, WF8 2LN
☎ (0977) 797777

PAW

Sure, the *Graphic Adventure Creator* is versatile, but if you really want a package that's truly flexible, allowing you to create the best, most innovative and largest adventure games, *PAW* is definitely the one to go for. Funnily enough, it's now available on budget (lucky it landed on these pages, then really, isn't it?). This means that the best adventure creator available will only cost you £7.99 from Gilsoft, who can be found on 0446 732765 (okay, we're supposed to be covering stuff for less than a fiver, but this is such a barg' we had to mention it).

Amsoft

When the CPC was first launched, Amstrad set up a little software house to sell supporting titles until the industry dug its teeth into the machine. In issue 90, we reviewed the budget release of a great number of the serious packages the house was selling, at only £1.50 would you believe?

Following is a list of those titles, all of which were written for the CPC 464. Those marked with a star are also compatible on the 6128, but Plus owners beware – neither Amsoft or *Amstrad Action* can vouch for whether these titles are compatible with your machines. Anyway, here they all are:

- *AMSWORD** – A simple word processor that should be quite good for getting you started with serious software on your CPC.
- *CHEMISTRY REVISION** – An 'O' level chemistry revision course. Okay, I know GCSEs are the thing these days, but there should still be quite a lot in there that's relevant to you.
- *DECISION MAKER* – Weird one this. It helps you make decisions. I think I've just reached one, that being that I'm not going to try to explain much further.
- *ENTREPRENEUR* – This one's a package for small businesses, taking care of all the difficult stuff like ledgers, payrolling, etc.
- *FIG FORTH** – FORTH. Yeah!
- *HISOFT PASCAL 4T** – PASCAL. Yeah!
- *PHYSICS REVISION** – See the chemistry revision bit, replacing the word 'chemistry' with 'physics' all the way through.
- *PROJECT PLANNER** – Believe it or not, it plans projects! Seriously though, it deals with efficiency, time management and documentation of work.

As you can see, it's all fairly straightforward stuff and you can get each and every one from:
The User Group, PRE Complex, Pallion, Industrial Estate, Sunderland SR4 6SN.
☎ 091 510 8787.

Public access

Finally, we go from the completely free to the very nearly free with the Top 10 public domain titles of all time, courtesy of our very own techie blokey, Richard Fairhurst:

1 *BREAKDOWN* – A *Breakout* clone (I bet you didn't guess that).
2 *CROCO MAGNETO* – The free game on which the not-free *Ball Bearing* was based.
3 *EVE OF SHADOWS* – Definitely the best adventure on the PD scene and one of the best on the CPC, period.
4 *POWER TETRIS* – Aargh! No! It's another *Tetris* game! Let me out of here!
5 *FORCEFIELD* – An action game.
6 *GPAINT 2* – The word 'paint' gives it away somewhat, doesn't it?
7 *B-ASIC* – An extension for BASIC on the Plus range that allows you to take full advantage of the extra facilities.
8 *GENO* – A WIMP system for the uselessly unfriendly CP/M
9 *DOSCOPY* – A package for transferring files to and from MSDOS format disks.
10 *POWERPAGE 128* – Sure Richard wrote it, but it is the best and you've got to allow a bloke just a little bias now and then, haven't you?

These programs will all be available from various PD libraries. See page 54 for addresses.

are the other little features, like a time limit, the ability to blow up sections of pipe you're not quite happy with and points bonuses for pieces of pipe that cause the ooze to cross its own path (technically known in the trade as looping).

To put it mildly, this really is a startlingly original puzzle game. It's also got a really weird bonus stage in which you have to steer falling pipes, *Tetris*-style, into place at the bottom of the screen, while still keeping the ooze flowing. One spillage, and, that's it, you're dead, matey.

Rainbow Islands (Hit Squad)

The undisputed King of the Cuties (now don't argue) *Rainbow Islands* has been a massive hit on just about every computer (and now console) format. The heroes of the also-excellent *Bubble Bobble*, Bub and Bob (great names of our time #83) return armed with rainbow guns to do battle with all sorts of cute-looking nasties.

It's platform action with a vertical flow; each level starts at the bottom and you have to guide your sprites ever upwards, leaping from platform to platform and using rainbow bridges to traverse the larger gaps. There's fruit to collect, the trickiest end-of-level guardians you'll ever meet, a plethora of power-ups and fast-paced, no-let-up action, all wrapped up in some glorious colourful graphics and so-catchy-it-hurts music.

RBI 2 Baseball (Hit Squad)

You know, compared to other formats, the CPC really doesn't see its fair share of sports sims. That's why *RBI2* is such a refreshing game; if it wasn't for the fact that no-one in this country has even the faintest idea how to play baseball (*it's easier to understand than American Football – Dave*).

No – don't go getting all indignant, I do mean you. If you took the time to check out the idea of the game, though (I can't say I have), you'd realise just how nifty this computer simulation is, with unobtrusive sound and some very effective graphics.

On a completely trivial note, the game is worth buying for the incidental animation bits alone (such as the ball flying right up to the screen when you hit it), but if you happen to be a baseball fan, so much the better.



So there are the rainbows, but where's the island? Trade Descriptions Act, methinks.


Here we can see Rick using the crafty 'stand still and hope they don't notice you' ploy.

Rick Dangerous 2 (Kixx)

What can I say? It's another chance to talk again about probably my favourite budget game at the minute. Me and Rick, we're a team. Well, I'm a huge hairy staffy, and he's a pixelated computer sprite, but I'm sure I feel some sort of bonding going on.

In this game, you guide Rick through an alien space ship and the landscapes of various planets, all in order to save the planet Earth from the wrath of some aliens who we all assume are going to do something typically alien like taking over the planet (*has anybody bothered to ask them? – Dave*).

So we've got Rick plonking himself about on platform after platform, encountering snowball machines, aliens, laser cannons, lifts, boulders, jungle traps, triffid-type killer-plant thingies, spikes, spears and, well, I don't want to ruin the whole game for you, now, do I?

Quite simply, when you're compiling your list of games to get hold of, this one should definitely be somewhere near the top.

Rodland (Kixx)

Yeeeessss! Now we're really getting down to some serious gaming. You've played all that cute stuff with various fluffy things wandering about the place? Well now it's time to destroy! Ha-ha! *Rodland* is probably one of the most disturbing games of the 20th century. The aim, you see, is purely to



Rodland – ripping our furry friends to lots of little bits, and then stamping on the bits.

destroy. Destroy. Ha-haah! Smash those little furry little things to bits! Wahaay!

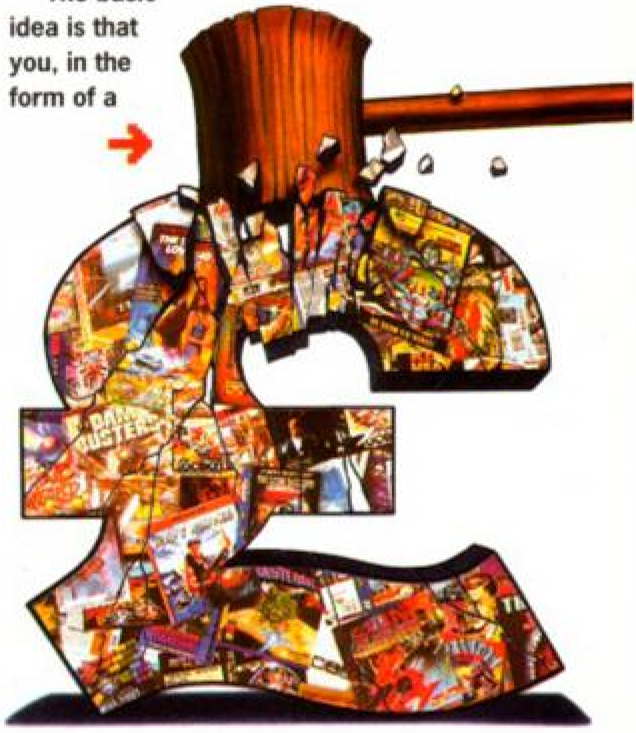
(I think it's about time I took over the situation here. Right. Rodland is a lovely little game in which two little furry things, namely Tam and Rit, journey through Happyland to find their Mom. If we look really closely, we can see little Tam reach out and pat one of those little creatures on the back. Uh-oh, he's shaking a little too hard. Let go, Tam, or you'll have somebody's eye out with that thing. Oh yeeuuk, that's gross! – Dave)

Yeeeeha! See all those really irritating cute little gits fly! If you look through the cloud of fluff, psychos and psychesses, you can just about see even more good guys getting slammed into the ground. Now this is what computer games are all about...

Spindizzy (Alternative)

To a great extent, Paul Shirley's *Spindizzy* set the standard for isometric and platform exploration games for aeons to come, with creepy agoraphobic silence combined with feats of incredible timing.

The basic idea is that you, in the form of a →



Even Cheaper!

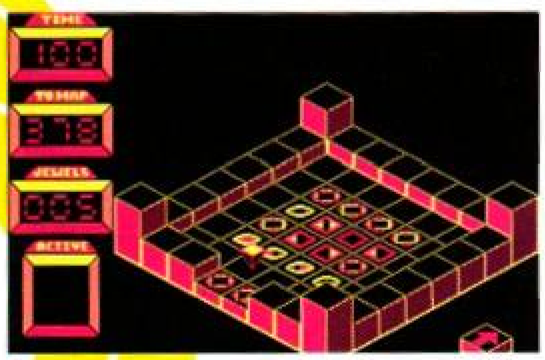
There's another form of cheap software that we haven't yet covered. If you look back at *AA* issues 91 to 96, you'll find a series of serious packages on the covertape – absolutely free with the magazine! If you want to know more about how to get hold of them, just turn to page 36 of this ish, but anyway, here's the stuff you could get hold of:

- *Tasword* (91) – A groovy little word processor that does the lot.
- *BooTracker* (92) – A wonderfully fabulous soundtracker package written by a gorgeous hairy hunk (*I wonder who could be writing this bit? – Dave*) of a guy.
- *Racing Boxform* – Horse racing predictor not written by a gorgeous hunk of a guy.
- *Instant Recall* – A database for beginners, but powerful enough to serve most needs.
- *MasterCalc* – Probably the best spreadsheet available on the 8-bits.
- *Screen Designer* – Last month's rather funky art package.

gyroscope, ball or pyramid, all of which are called Gerald, have to collect 100 games which have been scattered around an absolutely huge multi-screen playing area.

The only controls you have over Gerald are directional; unless you find a ramp and get a pretty good run-up, you've got no chance of getting off the ground. Still, there's plenty to take your mind of thing like that, such as switches, moving blocks, lifts, ice, water, bottomless pits and a huge variety of other scary perils.

Quick – everybody look really strange.



Switches, switches everywhere – this song-writing lark's a bit of a doddle, isn't it?

Switchblade (GBH)

Now this one's a game milestone in 8-bit history. You see, *Switchblade* was initially released by Gremlin on cartridge for the Plus and blew reviewers away with its innovative style, fast action, exploration factor and general beauty. It had everything a platform romp-'em-up could ever want.

The basic plot was to do with exploding swords or something or other, but all you need to know is that what the game's really about is screaming around an absolutely huge game map collecting all kinds of special weapons and bonuses, along with bits of a sword type thingy.

GBH's release was strangely timed, though, as the original still seemed to have



Before starring in a game, our hero worked for British Telecom. That's him with a pylon.

a hell of a lot of support, but it's nice to see that owners of normal CPCs can cash in on a piece of the Plus's action.

The Addams Family (Hit Squad)

The Big Boys' Book Of Publishing, page 247, clearly states that when reviewing anything even remotely connected with *The Addams Family*, you must avoid all words ending in the sound 'ooky' (and that one doesn't count). So be it.

Before the appearance of Titus's two latest stunners, *The Addams Family* was alone in being a game that actually bought console gameplay techniques to the 8-bits – techniques such as jumping on the heads of ghoulies to kill them and to gain extra height for a jump, amongst others.

But is that all that made this game so special? Well no, really. You see, somehow, the programmers managed to include the most important element in any game –

Know your contacts:

GBH
Carver House, 2-4 Carver Street, Sheffield
☎ (0742) 753423

Hit Squad
2 Castle Street, Manchester M3 4LZ
☎ 061 832 6633

Kixx
Unit 2/3 Holford Way, Holford, Birmingham
B6 7AX ☎ 021 356 3388

Touchdown
The Spires, 677 Hugh Road, North Finchley, London, N12 0DA
☎ 081 343 9143

And honourable mentions go to...

In other words, the ones that also darned funky, but not quite so hot, plus a couple I liked that Dave didn't and Dave liked that are frankly rubbish, but everybody's entitled to their point of view, I suppose.

Rick Dangerous	Kixx
Bubble Bobble	Hit Squad
Chase HQ	Hit Squad
Driller	Hit Squad
Ghostbusters 2	Hit Squad
Head Over Heels	Hit Squad
Konami Ping Pong	Hit Squad
New Zealand Story	Hit Squad
Nigel Mansell	Alternative
Puzznic	Hit Squad
Smash TV	Hit Squad



Ooky, spooky, gooky, fooky, sooky, mooky, and pooky – sorry, I just couldn't resist it.

fun. That's right, none of your fancy tricks or hugely involving game plots, just good old-fashioned fun (ie, it's one for people who can never be bothered to read instructions – like Simon). The timing involved is sometimes quite fiendish, but you'll never get discouraged.

So, rounding off the Top 10, we find a game that seems to be catching up with a lot of the concepts found within full price console software, and selling it for £3.99 a shot. Now, that can't be bad.

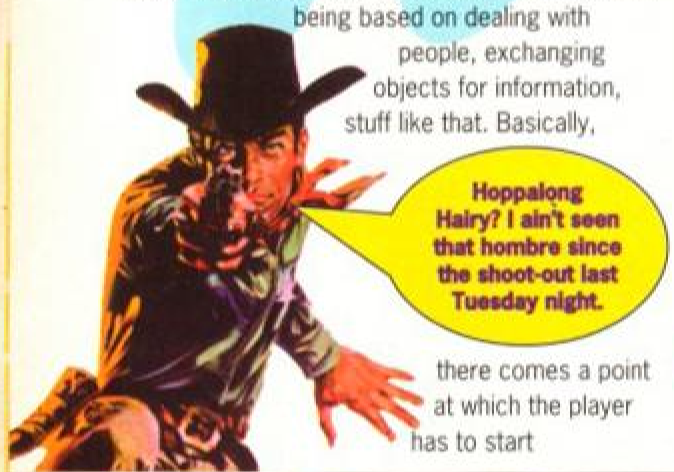


Venture Forth

An adventure without character interaction is like a Sunday roast without gravy. So Simon Forrester gives you a recipe that'll give your home-made adventures a good basting. (Er, does that makes sense? I failed Home Economics.) (No – Dave.)

Potentially one of the most impressive things about a good text adventure is the characters you'll meet. You see, non-player characters are a hell of a lot more than objects, you can't have a character that's dumb, and you definitely can't have a player that you can examine!

If used properly, computer characters can turn what would otherwise be a flat and dull game into an enjoyable adventure, with problems being based on dealing with people, exchanging objects for information, stuff like that. Basically,



there comes a point at which the player has to start considering his actions and keeping in the good books of a few other characters.

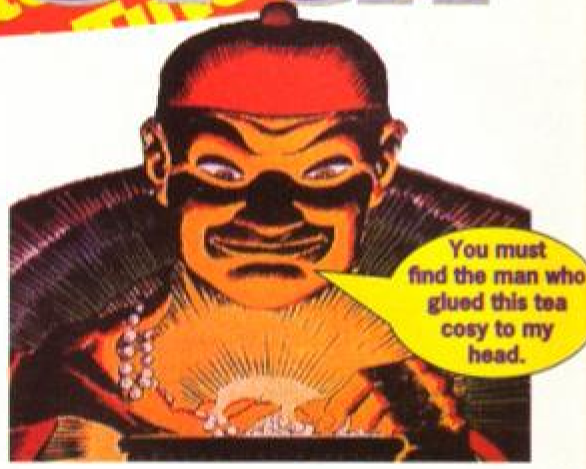
So what can you do? If you're going to make players realistic, giving them motives, knowledge and, most of all, pockets, you've got to come up with a pretty good character system. So what are the main aspects of a computer character?

Pockets

One thing that'll keep your adventure rolling is character exchanges; having to exchange goods for information or other goods, which might prove to be incredibly useful later on in the game. A good example of this is the system in Level 9's *Gnome Ranger*, in which there is a shopkeeper that, because he is so eager for you to buy something, will pay you for running an errand (in this instance, the errand is seriously damaging to your health, but that's beside the point).

Information

One of the many ways in which adventures imitate the slightly blacker side of life is in the



form of corruption. If a character can be bribed, so much the better, and if information can be bought in the same way, you've really got it made. You see, puzzles don't always have to revolve around manipulating inanimate objects, and having to go on mini-quests in order to gain important information which can help you overall in a game can liven things up a good deal.

Instructions

Probably the best example of a character that can follow instructions can be found in the manual accompanying the adventure writing package, *PAW* (*about which there's some news in our budget software feature starting on page 13 – Dave*). The example given is of a lift mechanism, which needs winding to move it up, the handle being on the ground floor. With the suggested system, you could instruct a character to turn the handle, winching you up to the higher level, where you can operate the lift to winch the character up to join you again.



Fleshing out your characters

What with all this method theory stuff, we thought you might like a few guidelines on what to do and what not to do when creating characters for your own game. In the end, the make-up of your characters is totally up to you, but here are a few pointers that might just help you out:

- **Keep them simple. Blacksmiths work well in a medieval setting, and bus conductors from Chiswick work well in modern life stuff. Death Command Wizards from the Elite Stormtroopers of Quaarg never really work in either.**
- **Don't have characters that give too many clues away immediately that you meet them. If you tease a player with an interesting and entertaining character, they won't mind plugging away for more information, no matter how long you keep them hanging on (in theory, anyway).**
- **People aren't statues – they should like to walk around a bit, so don't keep them in one place. It also helps to keep the player on their toes if they have to search for a character as opposed to simply going back to where they left them last.**
- **When you give a character instructions, they might not always want to obey – people do have free wills, and should be programmed as such. This could be tied into the information reticence system discussed in the main copy.**
- **Give characters a home. It's quite an easy thing to do (you're just setting up a location), but it's nice to be able to poke around other people's homes, don't you reckon? (*You know, Simon, sometimes I really do worry about you – Dave*).**
- **It might be nice to have them interacting with each other – take a look at the *Quest For The Golden Eggcup*. This isn't difficult, it just means getting them to say the occasional thing against other NPCs, and maybe even avoiding each other.**
- **Personalities are fun. Don't ever give character responses in your own style – if you've got eight characters, there should be eight separate personalities there as well.**
- **Everybody dies, so make sure the player can kill them. There's nothing better than a player suddenly realising that he's just bumped off the only person who could have helped him find something.**
- **NPCs don't wait until they're spoken to – make them pipe up with any manner of odd phrase, be it relevant or not.**
- **They're not all friendly, and they're not always honest – deception is a powerful weapon.**

Anyway, we hope we've cleared up a few things – it's just up to you to write the actual program now, which, with a bit of luck, we'll covering next month. 'Til then...



Great in theory, but what about in practice?

So how do you create a character? Well, in the vein of the rest of this series, let's approach this from a programming angle, and go through the basic functions again.

Pockets

This is a really simple one to start off with, really, as all you've got to do is set up one variable to contain the object number (therefore acting as a pocket) and a set of object numbers of objects the character will accept.

Information

The outlet of information is a bit of a tricky one. There is a system that springs to mind, however, that being hostility points. This idea is based on having one value stored with each character, signifying how reticent they are at giving information. Each object that they'll accept has a value which will be subtracted from the hostility figure if the character is offered that object; when the value reaches zero the character will become friendly.

And so for every five (or any other figure you feel is appropriate) object points after this, the character will 'speak' a predefined string, which should (if you, the programmer, are feeling in a particularly benevolent mood) help the player out a little. For example, you could have phrases like, 'The blue key can be found in the bucket under the stairs'.

Instructions

These are a little more complex. The basic idea is that when the player says something, control will be passed to a small subroutine that should break down the phrase, trying to recognise verbs. This works in roughly the same idea as the USE command I described in an earlier Venture Forth (*last issue, actually, not that Simon "memory of a particularly forgetful goldfish" Forrester would remember – Dave*).



A novel twist

This one probably won't be of much use to most people writing text adventures, but the Captain Blood character interaction system bought quite an innovative concept to interaction.

The basic idea is that you have a series of icons which represent words or ideas through which the player scrolls, selecting those that best convey they want to say. The NPC (non-player character, though if you didn't know that how have you survived this series so far?) then responds in icon form, doing away with all problems of grammar, and giving much more freedom over sentence structure.

Though this system isn't really applicable in a normal text form, you can apply roughly the same technique by ripping apart a sentence to pick out key words, processing them a lot easier than a full sentence and returning a sentence that, owing to the keyword system, is really quite structured. If you prefer, you could use a system that returns a pre-programmed set of responses (in the same manner as the information system). And that's yer lot for this month.

Simon



Where's the flippin' program?

All right, all right, don't keep on about it. Besides, I thought you were writing that bit yourselves, or are you too lazy? You are? Great. Well, just for that, you'll have to wait for it to appear on the covertape as soon as we get the space (probably issue 99). We really, honestly, can't print it in full now, as it really is just too big, but if you hang on a bit (or if you can offer a suitable huge sum of money), your patience will be rewarded.

In the meantime, next month we'll be printing some little subroutines and programettes you might find useful when creating your own adventure characters. It'll be essential reading for all adventure writers (I love hyperbole).

Typing Listings

If you've never typed in a listing from *AA* before, Here's what you need to do:

- **Type in exactly what we print EXCEPT the first four letters.**
- **The first four letters are a code which word in conjunction with the following program, *TypeChecker*.**
- **Only press Return once for each line, when you've typed in the whole of that line.**

To use *TypeChecker* type it in and SAVE it. Then when you want to use an AA listing and you want to double check you've typed it in correctly:

- **Load up *TypeChecker*.**
- **Type NEW.**
- **Type in the listing.**
- **When you've finished type LIST.**
- **At the end of every line a highlighted code will appear. It should correspond with the code printed in front of that line in the magazine. If it doesn't you've typed in the line incorrectly.**

```
PAML 10·'·TypeChecker·V1.0·-·By·Simon·Forrest
     er·-·Dec·1992
MAOJ 20·'·For·Amstrad·Action·-·Public·Domain
DANK 30·MEMORY·&9FFF
CAJK 40·csum=0
CAME 50·FOR·addr=&A000·TO·&A05B
DAKJ 60·READ·byte$
GAJB 70·byte=VAL("&"+byte$)
FACF 80·POKE·addr,byte
GAFB 90·csum=csum+byte
DALK 100·NEXT·addr
OACI 110·IF·csum<>&2ADD·THEN·PRINT·"Checksum·
     Error":END
LAHE 115·POKE·&A001,PEEK·(&BB5B):POKE·&A002,P
     EEK·(&BB5C)
KANI 120·POKE·&BB5A,&C3:POKE·&BB5B,&3:POKE·&B
     B5C,&A0
MACN 130·PRINT·"TypeChecker·V1.0·Installed":E
     ND
MABC 140·DATA·CF,FE,93,FE,0A,CA,00,A0,F5,C5,D
     5,E5,FE,0D,CA,22
LACJ 150·DATA·A0,5F,16,00,2A,5A,A0,19,22,5A,A
     0,E1,D1,C1,F1,C3
LAFJ 160·DATA·00,A0,3E,20,CD,00,A0,3E,18,CD,0
     0,A0,2A,5A,A0,7C
LADI 170·DATA·CD,45,A0,7D,CD,45,A0,3E,18,CD,0
     0,A0,21,00,00,22
LACN 180·DATA·5A,A0,C3,1B,A0,F5,E6,0F,C6,41,C
     D,00,A0,F1,E6,F0
KAJC 190·DATA·1F,1F,1F,1F,C6,41,CD,00,A0,C9,0
     0,00,END
```

- **Turning *TypeChecker* off (it is automatically initialised when you RUN the above program) and back on again is quite simple:**

```
POKE &BB5B,0    off
POKE &BB5B,3    on again
```

And that's all there is to it! Send all your letters of thanks and three-day old kebabs to Simon Forrester.

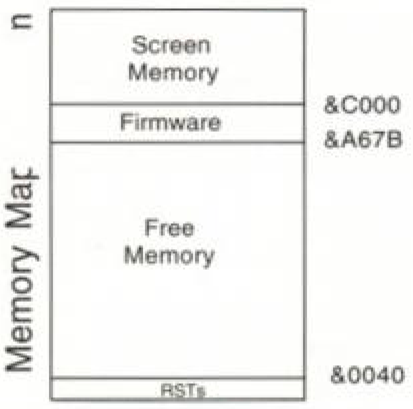
Assembly Line

Will Simon ever get back to the subject of ball games? Not this month, at least, because instead, the hairy one's concocted a beginner's guide to Machine Code, which is handy, considering there's an Assembler on the covertape this month.

Okay, okay, so I haven't quite managed to steer this whole thing back round to ball games just yet, but cut me some slack here – I'm on a mission. You see, since we've stuck an absolutely wonderful Assembler on this month's covertape, there'll be a hell of a lot of people out there wanting to get going, so it seemed like a pretty good idea to explain the very basics of Machine Code to bring everyone up to speed (or get everyone's engine running, at least).

Thanks for the memory

First, then, let's take a look at the way the CPC works. Let's begin with a memory map:



This diagram represents 64K of your machine's memory. If you've got more memory than that (if you own a 6128 or a memory expansion), worry ye not, but for the moment we'll be concentrating on the first 64K.

When I say 64K, you see, I'm referring to 64x1K. Now, in a slight moment of whimsical fancy, the kilobyte decided that instead of being 1000 bytes long, it would be 1024 bytes long (don't worry – it all fits in perfectly). This means that what would logically seem to be 64000 bytes is actually 65536 bytes (more for your money).

Now, imagine a set of pigeon holes, in a row, 65,536 holes long. You've also got 65,536 envelopes, on which you can write a number from 0 to 255 and you can only put one envelope in each pigeon hole (*hang on – have we entered the Twilight Zone? – Dave*).

Understand that? Well, the line of pigeon holes is your CPC's memory, and each envelope is a byte. Each hole within this 64K block is referred to by an address (a location number), indicating its position from 0 to 65,535. The numbers on the envelopes (the bytes, in other words) are actually representing mnemonic instructions (words to you and me). Take a look at this:

```
3e 07 cd 5a bb c9
```

It's okay, you can stop screaming. It's a routine that goes beep. That's all. But you'd write it like this:

```
ld a,7
call &bb5a
ret
```

And you can see just how much easier this is to understand. Let's clarify things a little further:



Think about this: could you have written something like Prehistorik in BASIC? Answer: no. Learn Machine Code and you too can get a rating of 96 per cent.

Why bother?

You're probably wondering why to bother learning machine code. Well, type in, Assemble and run the following *Zapp* listing:

```
        org &4000
        ;
        ld hl,50000
.loop  :dec hl
        ld a,h
        or l
        cp 0
        jp nz,loop
        ret
```

All your machine should do is pause for a while, then return control to you. Now try this in BASIC:

```
FOR a=1 TO 50000:NEXT a
```

See how much longer it takes? If simple stuff like this is markedly faster, imagine what you could do in a huge program!

You're just using me...

Well, imagine that instead of programming in whole words (like you do with BASIC commands), you used numbers to represent everything you wanted the machine to do. If you put these numbers in the correct order into the memory locations, you could get the CPC to treat them as a program and make sense of them. That's because these numbers are what we call Z80 opcodes. The Z80 bit just refers to the chip inside your CPC, and an 'opcode' is an operational code. So a Z80 opcode is just a number that the main processor inside the CPC can make sense of and act upon.

Of course, it would be wholly unreasonable to expect you, the programmer, to think in numbers instead of words – what you need is some way that you can type in commands in a more easy-to-understand form and then have them translated into opcodes at the last minute. And that's what an Assembler lets you do (for more details on how an Assembler works, check out page 4).

Hexadecimal

You'll probably have been wondering about the strange numbers in the listing prefixed with '&' which sometimes contain letters. Don't panic. These are just hexadecimal numbers which are used in programming because computer memory is based on sets on 8 and 16 switches.

Hexadecimal numbers count in base 16 instead of base 10. This means that instead of counting 1–10, you count 1–16. However, for the numbers 10–15 (16, just like 10, is a two figure number), you use letters, to keep things tidy. These letters run from A–F. So how do they look when they're running? Below are a few simple conversions for you to get the hang of things. Remember though, hexadecimal numbers are always prefixed with a &.

Hex	Dec
&00	00
&01	01
&09	09
&0a	10
&0f	15
&10	16
&19	25
&1a	26
&1f	31
&20	32

And just like decimal numbers, you can add more columns (powers) at the left-hand side of the number. Only instead of decimal having powers ^10, we have powers ^16:

Hex	Dec
& ff	255
& 100	256
& 1ff	511
& 200	522
& fff	4095
&1000	4096
&ffff	65535

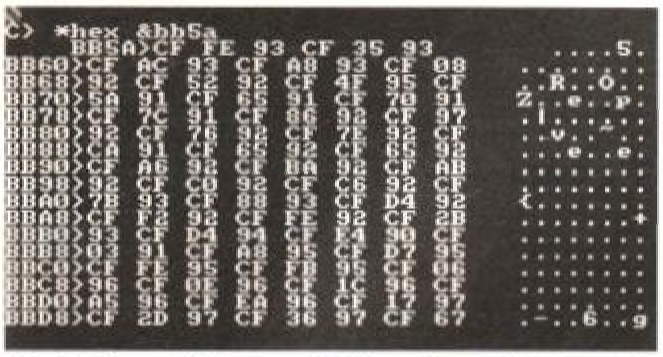
There you go then... It wasn't that difficult, was it? It was? Read through it again, have a think about it, and it'll soon make some kind of crazy sense. Trust me, I'm a journalist. Okay, trust me anyway.

Assembly language

So what about the actual language? Well, remember BASIC's variables? This time, they're



Zapp has facilities for stuff like catalogues.



Wow! A hex editor! Doesn't this make you feel proud to be a CPCer? So go out and hug somebody today.

called registers, and you've only got seven. These are **a** (the accumulator, where the majority of maths operations are carried out), **b**, **c**, **d**, **e**, **h** and **l**. Each register can hold an 8-bit number (and if you just went, 'Durr...?' check out the binary boxout).

There will be times, though, when you'll want to process numbers higher than 255. This is where the 16-bit pairs come into play. These pairs are made by coupling two 8-bit registers together. The accepted couplings are **bc**, **de**, and **hl**. As far as registers go, that's all you need to know right now!

Flag waving

So let's talk briefly about the flags. There is, you see, an extra register, called the **f** register, which contains all the information on flags. A flag can only ever be on or off. There are only two flags we'll be concerning ourselves with right now.

The **carry flag** is referred to as **c** and is set whenever the last operation caused a register to fly right off the bottom of the scale and back on to the top, or vice versa. The **zero flag** (**z**) simply indicates when the result of the last operation was zero.

You see, these flags can be used in conjunction with loads of different instructions, such as call, jp, ret, and the like, allowing the programmer to create the equivalent of BASIC's `IF` statement. Don't worry too much about this for now, as you'll get the hang of them as you go along.

The instruction set

Following is a list of all the major machine code instructions (the ones you type in before you stick the program through an Assembler to convert it all back into numbers), and what they do:

`add` – This command is used to add a number to the contents of a register, and leave the result in that register. For instance, `add a,7` adds the value 7 to whatever's in the accumulator to begin with.

`call` – This one is the equivalent to BASIC's `GOSUB` command, in that you complete the command with a memory address for the CPC to jump to and continue running the program from that address onwards.

`cp` – When you want to compare a figure or another register with the contents of the a register, this command would take the form `cp 7`. Here we have just compared the number 7 to the accumulator – if a match is found, then the **z** flag is set.

`dec` – As a faster form of subtraction, `dec a` would decrease the accumulator by the value of one.

`inc` – See `dec`, but remember, this time you're incrementing (*that's logical – Dave*).

`jp` – Equivalent to BASIC's GOTO command, only this time it's followed by a memory address.

`ld` – This one's the nitty gritty. Let's say we're trying to get the value of 15 into the accumulator. The actual command would be `ld a,15`. If you wanted to copy the contents of the **b** register into the **a** register, the command is `ld a,b`.

That's not all, though. If you want to load the accumulator with the contents of a memory address: `ld a,(addr)` you could also point to the address by holding it in `hl`, and using `ld a,(hl)`.

`ret` – Equivalent to BASIC's `RETURN`.

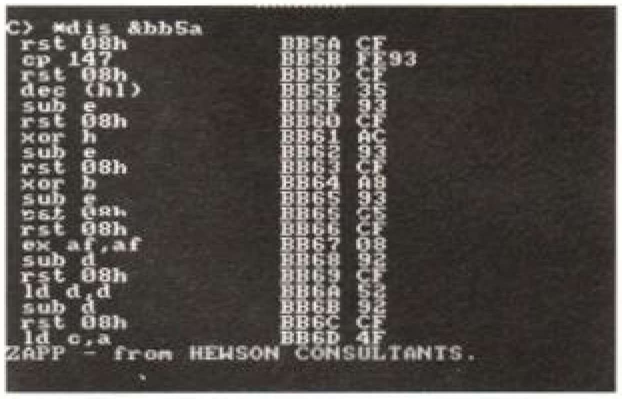
`sub` – See add, but remember to subtract.

Firmware

As you'll have seen from the memory map, there is a small area of memory consigned to firmware. Firmware is an area of memory stuffed full of three-byte routines that run little sub-routines in the CPC's ROM. These routines can be used for many things, such as printing characters, reading the keyboard, loading files, using printers, you name it, really. So let's take a look at one:

`&BB5A TXT OUTPUT`

Action: Output a character or control code at the current text cursor position.



Disassembly, disassembly, erm, disassembly. It's the disassembler bit, and you can disassemble machine code back to mnemonics. Disassembly.

Entry: The a register contains the ASCII character to be printed.

Let's try it out:

```
        org &4000
        ;
        ld a,65
        call &bb5a
        ret
```

For a full list of all firmware calls, there is one book you'll really need, *The Firmware Guide* by Bob Taylor and Thomas Defoe (see Code Books).

Application

Uh oh, Dave has just reminded me that you still won't be able to use all this stuff for actually writing programs. This calls for a simple little program. So let's print a message!

```
        org &4000
        ;
        ld hl,string
.loop   :ld a,(hl)
        cp &ff
        ret z
        call &bb5a
        jp loop
        ;
.string:defb "Simon Forrester - what a dude!"
        defb &ff
```

The binary bit

Around this feature at various points you will have heard the term binary. The odds are, if you're new to machine code you might not quite understand what binary is, or why it's used.

***Computers, deep down, can only store two* numbers – 1 and 0, which represent a current of electricity or no current. But how can large numbers be represented in this way? Using binary, that's how; you can calculate any number up to 255 with just eight 1s or 0s (bits). This diagram should make things a bit clearer:**



In other words, the binary number 10010111 is the equivalent to the sum of 128+16+4+2+1, (151 in case you can't add up), or &97 (which is hexadecimal equivalent – see the Hex box out)!

This is known as an 8-bit number, because the binary number can have up to eight digits. To get 16-bit numbers (which can calculate up to 65,365 – spookily the number of bytes in your 64K CPC's memory) you use two sets of 8-bit numbers in combinations explained in the main text.

If you've been following the rest of this article throughout the last two pages, you'll be able to follow this, but for a few points.

- You can use commands like `ld hl,string`, as the `string` bit will be replaced by the memory address of the string to be printed.
- The `defb` command can handle strings as well as numbers.
- The number `&ff (255)` is used to signify the end of the string.
- The strange indentations are simply to make it clear what is an instruction and what is a label.
- Full stops tell *Zapp* that what's following is a line reference name, and colons signify the break between label and instruction. Semicolons are just used as `REM` statements.

That's yer lot

And that concludes our whistlestop tour of Machine Code programming. In a mere two pages it's a bit like trying to scratch the surface of the subject with a wet sponge, so if you want to know more check out the books we've recommended. Next month, it's back to the ball game (probably), so see you there.

Code books

The books we reckon you should get your paws on if you want a more in-depth guide to starting to program Machine Code are *The Pipeline Tutorials* from Sentinel Software. We reviewed a whole batch in issue 91 and the latest two are covered on page 22 of this ish. They all cost £1.50 and you can get them by writing to Richard Wildey, Sentinel Software, 41 Enmore Gardens, East Sheen, London SW14 8RF ☎ 081 876 7032.

***The Firmware Guide* is available from 8 Maze Green Road, Bishop's Stortford, Herts CM23 2PJ.**

Code breaking

So now you've got Zapp you're ready and raring to have a go at Machine Code programming, yeah? One problem – it's a tricky business. Simon Forrester's been looking at a couple of tutorial booklets that might just be able to help you out.

You're set to make a million pounds. You've come up with a winning concept, you've drawn everything up in an art package, and you've already received a payment up front of a Porsche, a mansion and a swimming pool full of champagne, when suddenly you realise you don't know the first thing about writing games in Machine Code! Bummer luck, but an easy mistake to make – what you need is a tip or two about Machine Code.

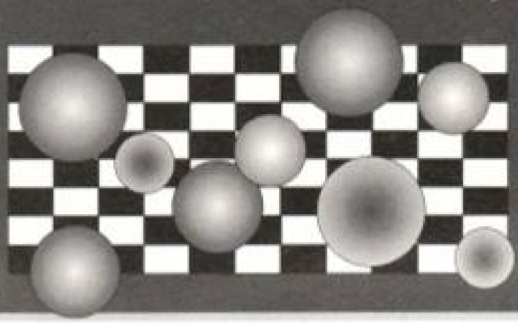
In issue 91, I reviewed of a set of a dozen or so Machine Code tutorials from Pipeline Software that received an excellent verdict: "These books have to be the best Machine Code guides so far, and well worth the price," I said at the time, and I'd still say it now, if asked. Or indeed if not asked, like I just haven't been. In fact, now you've got a copy of *Zapp* (it's on the covertape in case you hadn't noticed) they're a good bet to buy if you want to get seriously into Machine Code programming.

Since then, Robin Gilbert, the author, has been working on some sequels, so let's have a look at the first two to see the light of day.

Techniques Of Demo Programming

Aaargh! Demos! No! It'll all end in thousands of identical demos from France with a few scrolling messages and a couple of hundred raster bars. What's the point? A demo is supposed to show programming skill, not how well you can repeat the same effect that everyone else has used since the dawn of time (or 1988, anyway).

There are probably a lot of people who would violently disagree with this view of demos, such as Face Hugger, who creates demos without a single irritating moving raster bar (or if there is, it's put to good use instead of just moving up and down) relying instead on maths calculations, etc. Good for them. So, my personal feelings aside, this tutorial provides all the info you'll need to create demos with all the requisite repetitive effects.



The book takes you through scrolling messages, colour cycling (which allows you to display more than the designated number of colours on screen), multicolored characters, rasters, somebody please help me, overscan, I'm falling asleep, underscan, music...

It has to be said that this one really isn't as well written as the sprite book – there is more emphasis on working listings as oppose to step-by-step explanations. For a proficient Machine Coder, this won't pose too many problems, but this is a book you should only approach when you've got a very firm grasp of just about every other Machine Code concept. Beginners, on the other hand, should steer well clear (and anyway, the later they get indoctrinated into demos the better as far as I'm concerned).

The World Of Sprites

For all those of you who don't already know, a sprite is a picture that is drawn on screen, and moved around. It's quite a bit more complex than that in reality, when you want to get sprites to do things like pass over each other, collide and not erase the background, but the basic concept is still the same – a sprite is a multi-coloured character of any definable shape or size.

This tutorial is 34-pages thick, covering (hopefully), everything you'd need to know about how sprites are stored, the layout of the screen (as far as your CPC's concerned) and all the technical bits you'll need to know to get a sprite off your art package screen and springing into life in your very own game.

It begins by detailing the layout of the screen memory on the CPC and how the different coloured pixels are encoded (and, therefore, how to utilise the system).



Next, the guide talks about animating your sprites, using them as background items, moving them (it's not the same as animating, honest), collision detection (working out when one sprite is hitting another), special effects (spraying your sprite with a wall of fire while a Tyrannosaurus Rex chases it, forcing it to melt through a set of metal bars, or something along those lines).

As a guide, it's concise, but very clear. Though what you're reading will be nothing but the facts (*a world apart from your writing, then – Dave*), a fair amount of time is spent on each concept, and a decent amount of explanation is given for each of the principles covered. There are example Assembly listings provided, that are provided on disk for an extra £3.

All in all, if you want a guide to creating and using sprites, this is definitely the book for you (well, booklet) (*does that make a large pamphlet a pamph? – Dave*). It would also be a fairly good idea only to



think about attempting things like sprites if you're sure you've got a good grasp of most of the principle concepts of Machine Code – your brain'll explode if you're not too careful!

Anyway – happy coding!

Contact

The outlet for these guides has changed since our review of the last batch. They are now available from Sentinel Software, for £1.50 each. If you want to get the source code for both guides, just send along £3 for a disk. And the address is: Richard Wildey, Sentinel Software, 41 Enmore Gardens, East Sheen, London SW14

Next Month

Next month, we'll be taking a look at Sentinel's new range of Basic tutorials, from the same author. So 'till then, er... do what you like.

AA SMALL ADS

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Amstrad Action issue 94 and 95. Never been used. £1.50 each or both for £2.50. Postage paid. Tel 0942 218425. Michael.

Seventeen early Amstrad CPC464 User magazines, including issues 1 to 12 (August 84-November 85). Ring Doug on 0623 641409. Only £25 plus postage.

Got Prospell, Taspell, Brunspell? I have a *massive set of alphabetical ASCII files on* disk. Build your own dictionary disks from my 90,000 word lists. For details contact B Snell, 65 Bath Road, Southsea, Portsmouth PO4 0HX.

CPC464 £20. Philips colour monitor £90. Modulator £10. Disk drives £25 each. 64K RAM. £20 serial port and modem £30. Firmware manuals, books, software, offers please. Prices negotiable. Devon 0803 325234.

Amstrad CPC software. All original cassettes. Boxed as new. Send SAE for complete list to Paul Shipley, 24 Worthington Road, Balderton, Newark, Notts NG24 3RE.

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Amstrad 6128 excluding monitor, tape recorder, mouse, AA mags 25 plus covertape, ACU mags, CPC Attack, manuals, leads loads and loads of disks and tape. A wide variety of serious and gaming software. May be sold separately or everything for £300. Contact James on 0963 323290. Northern Ireland.

Amstrad CPC464, green monitor, keyboard, 60 games, joystick, manual, excellent condition. Only £100 ono. Tel 031 664 4903 or write to Kevin McEwan, 86 Dinmont Drive, Edinburgh EH16 5RY.

Green Monitor for 464 Plus. Still boxed. £40. 0772 713982.

CPC464, upgraded to 128K with green screen monitor, joystick, over £300-worth of software, recent AA mags, under guarantee, buyer collects, £225 ono. Phone Mike 0562 885383 (West Midlands).

Amstrad games for sale. Over £450-worth. Will sell for £240. Tel 0754 762963 and ask for James or write to 11 Flamborough Close, Skegness, Lincs PE25 1HR.

Amstrad CPC464. Green screen monitor, MP-1 modulator, multiface 2, 15 magazines, 13 covertapes, manual, three joysticks, 86 games including 3D Kit, Sim City, Total Eclipse. Telephone after 3pm week days, any time week ends. £180 ono.

Amstrad 3-inch second disk drive. £35. A good bargain in fully working order. Send cheque or PO only. Only a few left. Price includes p&p. Mr N Crozier, 90 Durham Road, Tassagh, Armagh BT60 2QE.

Amstrad CPC6128 with colour monitor, external disk drive, joystick, much software, business and fun. Internal drive not reading hence quick sale. 081 654 1495. £95 ono. Ring Jonathan.

6128 Keyboard, datacassette and magazines, plus 112 games for only £75. (Disk drive needs reader heads aligning) or swap all for CTM644 TV tuner and £30. Call Dave on 0526 344537.

Green Screen Monitor for use with a CPC464. Excellent condition. £30 ono. Tel 0563 36096.

Top CPC games for sale, including *Lemmings (disk, £6) Hollywood Collection* (disks, £8). Many more cheap games for sale (tape and disk). Phone Robert on 0582 761196 after 5pm.

Tape games and many magazines for sale. All in excellent condition. Reasonable offers accepted. Send SAE for list to Paul Jones, 4 Darley Gate, Eastbourne, east Sussex BN20 7UT.

Amstrad 6128, monitor manual, two joysticks, cassette player with leads, Crazy cars 2 disk, many tape games. Suitable for business or pleasure. Mini Office 2 disk. Extra disks ono. Tel 0909 562277.

Amstrad GX4000 console with all leads, joypads and paper. All in good condition. Games are Burnin' Rubber, Pang and Pro Tennis Tour. £40. Call Michael after 5pm on 0803 866942.

Amstrad games. Tape and disk originals. Games include Prince of Persia, Kick Off 2, Hero Quest, SWIV and over 200 more. Price 50p to £5. Phone Michael on 0803 866942.

CPC listings on 3-inch disk for £3. Mostly games and graphics. Also selling original games like Batman the Movie. Write to Angela Allum, 22 Point Royal, Bracknell RD12 7HH.

Micro Design Plus (disk 128K), two disks and manuals. As new. £12. Also AMX mouse and interface. £15. Both for £25. Masterfile 3 (disk 128K) £15. Tel Luton 0582 391885.

Clearout. 30 Original cassette games. £10. SSAP 1 Speech Synthesiser £2. Lightpen £2, working boxed. Joystick £2. RS232C Amstrad serial interface £25. Teach Yourself Basic 1 and 2 £2. Call Victor 081 349 3638.

Amstrad 664 keyboard only sold as spares £30. RS323C serial interface by Amstrad, boxed with manual £25. 16 disk games all original £10. Amstrad 6128, User's manual £10. Victor 081 349 3638.

CPC464 with colour monitor and joystick plus 70 games and manual. £150. 091 386 7441.

Games for sale. More games, more bargains including, Nigel Mansell, Bonanza Brothers, Mercs and more. In fact over 120 games with up to £5 off retail prices. Send an SAE to Paul Stevens, 9 Chiltern Close, N. Langley, Eastbourne, East Sussex BN23 8HD.

Amstrad 6128 Plus colour and GX4000, both boxed and in excellent condition with over 60 gemes and business software on disk and tape. £250. Phone 0233 628795. Will sell separately.

Amstrad 6128 Plus, keyboard only. Excellent condition. One month old. Software on disks and cartridges. Amstrad Action magazines. Paddle controller. Everything worth £700. Selling at £250. Will take less. Phone Nadira 0457 764155.

Megadrive, still boxed with carry case And two joypads. Six games including Streets of Rage 2, Terminator 2 and Lemmings. Worth £350. Sell for £190 or swap for Super NES. Phone Paul on 0842 811166.

DD1 with manual £60. MP2 modulator £25. Mini Office 2 £10. Amstrad Assembly Language Course disk and book. Amstrad CP/M Plus explained. 474 page book. All original in packing. 0633 857376 (Gwent).

Amstrad 464 with monitor, modulator, disk drive and over £250-worth of software and accessories. Consider splitting £190. Repairable Amstrad 464 with modulator. Offers. Phone Andy 543292.

CPC464 Plus with colour monitor. As new. Games, paddle, cartridge, little used. Excellent condition. £125 or exchange for printer suitable for Amstrad 6128. Selby 0757 248756. Naylor.

CPC6128, colour monitor, manual, tape recorder and leads, over 70 plus, top title games including Golden Axe, Graham Gooch, etc with Quickshot, Python Joystick. Worth over £700. Bargain at £225. Tel 081 521 8550.

Best word processor for your Amstrad, Brunword Elite on ROM. Complete package – as new £90 (check RPR). Lots of other utilities (serious stuff). Ring for list. Contact Helen 0203 448759.

CPC 6128 Plus, colour monitor, over 20 games, tape conversion by Wave. Over 30 AAs, manuals. Two years old. £140. DMP2160 Printer, hardly used, £80. Multiface 2, £20. Tel Bolton 399198 12-5pm.

Amstrad CPC6128 with colour monitor, games, two joysticks, mouse interface, Power Page, Mini Office 2, OCP Art Studio and German Master. Worth £500. Will accept £250 ono. Contact John 061 392067 (Limerick).

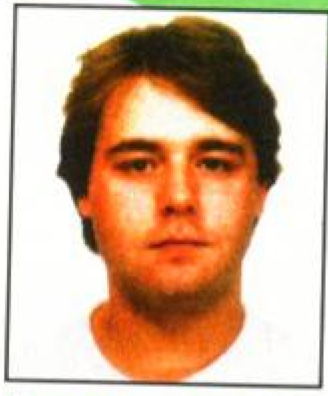
Continues on page 29 ➤

The STStablishment

You may have heard of them through a friend, a fanzine, an AA review, or whatever, but the odds are, if you've got a CPC, you'll have heard of them. Simon Forrester reveals why STS are the one of the hottest new CPC development teams around.

This really is a weird one to write. You see, in 1987, I was in a small programming team called SecretSoft. It was a two-man team, consisting of me (The Hairy Happening-Even-Then) and a blokey called Rob Scott. Together, we wrote a few utilities, such as copiers, formatters, programming toolboxes, hacking utilities, etc.

And lo, in 1989, there did come another programmer by the name of Mike Wheeler, whose graphical abilities were famed throughout the land (well, London, anyway), making the team a trio.



Have you seen Rob Scott? If you haven't, ring Shaw Taylor on 0225 442244.



The Dizzy Utility is STS's to sell.

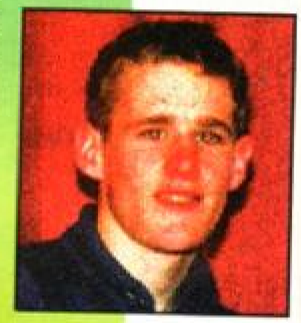
Things stayed this way until exactly a year later, when the CPC scene went through a slight revival, and SecretSoft grew to incorporate Simon Matthews (graphic artist and demo writer), Richard Wildey (PD librarian), Richard Fairhurst (y'all know him) and Adam Shade (Dartsma PD). 1990 also saw the name change to SecretSoft Technical Services (STS) as the group also began doing repairs and hardware mods.

1991 saw yet another change in the line-up, when I left to pursue some private coding, work in a handicapped school (the doors didn't open properly) and a few other projects (*like a wife and seven children – Dave*), until ending up on *AA* in December 1992. Adam Shade also left to take Dartsma full-time, turning it from a PD library into a company offering custom leads, a few select software titles and wads of clip art. So what's been happening since ? Rob and I went down the pub… er, met for an interview.

When was STS's first product released?
We started officially in 1989 with *SoftLok*, our speedlock transfer utility. This was originally sold by STS, but Campursoft carried an upgraded version.

So what else have you released on to the market since then?
Disk Imager, SoundHakker Pro, S/DOS Professional, Xexor, ZACK, Dizzy Utility.

What about *ZACK*, due for release soon?
It looks like it's going to be the best games creator for the CPC – if you look at stuff like *Pandora*, you can see that there's still huge gaps to be filled. *ZACK*'s got a full program editor of its own (working on its own structured language, which is a hybrid between BASIC and PASCAL), a graphics editor on par with *Advanced Art Studio*, and other similar stuff.



Ladies and gentlemen, may I present Paul Fairman of Sheepsoft?

What's your attitude towards the CPC market in general?
Just to shift the best quality software at the best prices and to provide quality back-up and after.

Stop press… Stop press… Stop press… Stop press… Stop press…

Quantum Leap

The accompanying interview was conducted with Rob Scott, the frontman of STS's 10-man team in mid-August. However, later on in the production of this issue (very late on, in fact), Tuesday 31st August to be exact, the AA office was hit with an extraordinary piece of news – STS had split.

The story is a simple one – the three newest members of STS, Daniel Heapley, Matt Gullam and Richard Wilson, have decided to go it alone and run their own company, Quantum Computing.

The split

So how did all this happen? Well, one swift phone call to the Cambridge hideaway of ex-STS member and not-ex-*Amstrad Action* writer Richard Fairhurst gave us a bit of an insight into that side of things:

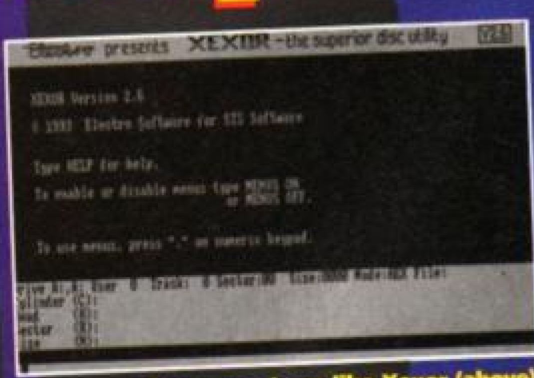
"Rob was voted out. In a way, I can see Richard, Daniel and Matt's point of view, it's just a shame it all had to happen so violently."

According to Richard, you see, the trio that are now Quantum were tired of supporting STS with software titles, whilst still not being able to take much control over sales, distribution, etc. Rob sees things a little differently:

"Daniel Heapley just came down and took over."

Quantum, meanwhile, are concentrating on the future: "We want to support the CPC right to the very end. We have a number of projects on the go and we want to go forward and release them as soon as possible."

We do have a rough idea of what Richard Fairhurst'll be up to in the near future, though – finishing off *CharleyTracker* (yet another soundtracker package), and continuing with his diskzine, *Better Than Life*:



If you've written a package like Xexor (above) why not send it along to Quantum or STS?

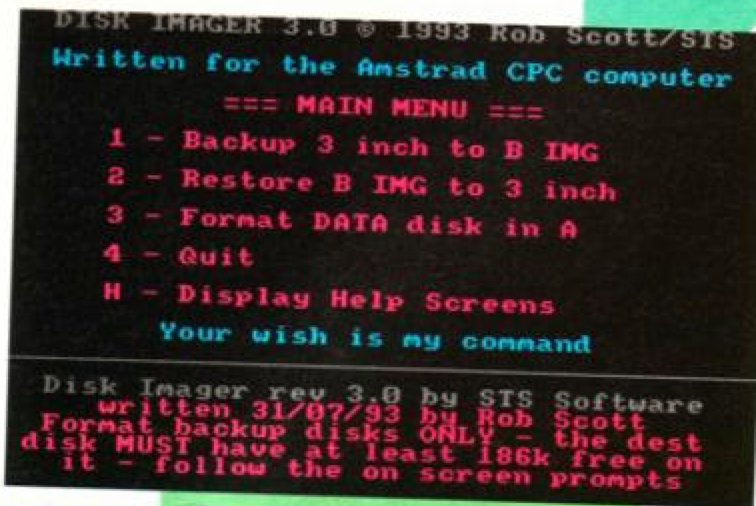
"I was never as closely linked to the group as anyone else. As far as coding goes, my main group is Discovery"

Personally, I think he said it a whole lot better with:

"Hump this for a game of soldiers, I'm sticking to PD!"

The showroom

So what does all this mean to you? Well, it's quite simple really (if a little mercenary) – the CPC has just gained another supporting



Unfortunately, *STS's* Disc Imager was unavailable for review at the time we looked at SafeSoft's Disc Archiver (AA94). Keep an eye out for reviews of the entire range soon, though.

sales service. We also want to help as many people as we can; we're running a free helpline service, for people who haven't even used us.

So who are your target users?
We sell to customers between 12 and 73 years old, with varying abilities – we cover the whole spectrum, from fully automated packages like *SoftLok*, to the more complex titles like *ZACK*.

Given that you're selling titles like *SoftLok*, what are your views on piracy?
We at STS software believe that everybody has the right to back-up software. However, our software is copy protected, but we will normally supply a replacement version if a disk is corrupt. We can hardly say we don't believe in backing-up with stuff like *SoftLok* and *Xexor* around.

What has STS got planned?
To keep developing software that will make the most out of the CPC's capabilities. Far too many software houses have taken it far too easy for far too long; we want to stretch what the CPC can do.

Speaking of stretching the CPC, what exactly are these mysterious hardware mods we've heard about?
The first is basically a chip that we solder into the CPC to enable it copy disks with which it wouldn't normally be able to cope (6K *Speedlock*). It's used mainly in conjunction with *Xexor*.

Secondly, we'll replace your internal AMSDOS disk ROM with *S/DOS Pro* for £40 (or just sell you the chip for £15). This leaves your CPC working as normal, but with the ability to cope with 800K 3.5-inch disks. It's also a lot more compatible – for instance, you can save Multiface files to a 3.5-inch second drive.

Do you plan to branch off into other areas?
There is an offshoot of STS called *Better Than Life*, which is the official STS disk magazine, coded by Richard Fairhurst. Richard, Matt and I are all editors, and we're planning to cover the more technical side of the machine.

So how many machines have you actually got?
Three CPCs, a 6128 Plus and an Amiga, but the Amiga's just there to keep the door open. You think I'm joking – I'm not. We really do keep the door open with it.

Do you think competitiveness is holding back the CPC scene?
Well no, really – we just want our piece of the market. If anything, it forces us to experiment and pioneer techniques. The newer projects like *ZACK* which I mentioned earlier only serve to prove the point.



Simon Matthews, the main graphic artist with the STS team.

What's your attitude towards *Amstrad Action*?
(Er, do you really think that's a good question to ask? – Dave.) (Too late now – Simon.)
Richard Fairhurst says it's super because it pays him lots of freelance money every month – I think that's got him covered! From my personal point of view, it's not quite technical enough, but…

…We interrupt this broadcast to bring you an important news flash…

s…Stop press… Stop press… Stop press… Stop press… Stop press…

company! So what will they be selling? To start with Quantum will be carrying a large proportion of the old STS range, namely:

- ***S/DOS Professional***, the high capacity disk operating system.
- ***S/DOS Utilities ROM***, a suite of tools complementing S/DO.
- ***Xexor***, the massively wonderful and fully comprehensive disk utility reviewed last ish.

Quantum will also be working on a few other projects yet to be finished:

- ***ZACK***, the comprehensive game construction kit mentioned in the main copy.
- ***Amigo***, a black box similar to *HackIt*.

As if that little lot wasn't enough, they've got the hardware side covered with a TV modulator and a range of 3.5-inch disk drives.

Anyone wishing to contact Quantum Computing would probably like to know that they'll be staying at STS's old address of 10 Lakin Drive, Barry, Mid Glamorgan, South Wales, CF6 5AJ. The phone number is (0446) 746920.

What next for STS?

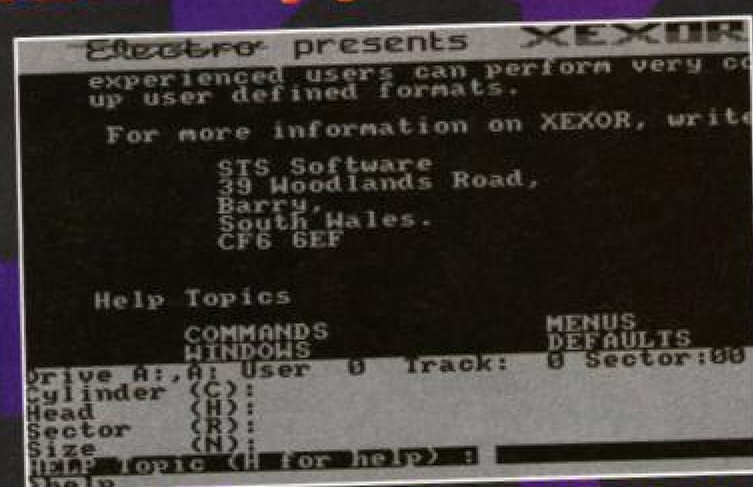
The next question, then, is what's happening to STS?

Well, from speaking to Rob recently, it seems to be a fairly 'streamlined' group from now on, consisting of Rob himself and Paul Fairman. At the time of writing, it's not known whether this new line up will include Tim Blackbond, Simon Walker or Simon Matthews, but we'll keep you posted on that one.

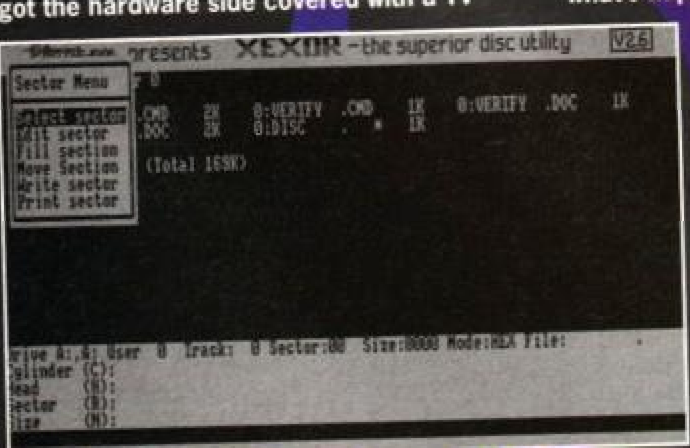
STS will be retaining the rest of its original titles, including:

- ***S/DOS***, the original version, as far as we know.
- The ***Dizzy Utility***, for transferring the range of *Dizzy* games to disk.
- ***Disc Imager***, a disk archiving package which is along the same lines as SafeSoft's *Disc Archiver*.
- ***SoftLok***, which has to be by far and away the best speedlock cracking package to date.

On the technical side, the original service will continue, offering hardware upgrades, modifications and all manner of CPC repairs. If you want to get hold of STS, you'd probably be best to contact Sheepsoft, at 39 Woodlands Road, Barry, South Wales, CF6 6EF or call (0446) 736529.



Failing that, why not throw another group into the fray, and have a go at selling software yourself? We've run pieces on it, and if these companies can be successful, why can't you?



Of course, neither company can promise to sell your work, but if it's good enough, you stand a good chance.

Technical Forum

They're tricky blighters these CPCs. Always causing problems. You just can't trust 'em. But there are an elite few who have mastered the arcane Amstrad arts and can help lesser mortals to a clearer understanding. Richard Fairhurst is one of those few...

Hack Attack

Is there any way of copying tapes to 3-inch disks on my 464? At present I have a DDI-1 disk drive, which I think means I can't use a *Multiface*. Do *HackIt* or other programs do the job? When you list game pokes, do they have to be done on a Multiface or *HackIt*?

Looking back in *AA83*, I noticed the following program:

```
10 ON BREAK CONT
20 IF pass$="any password" THEN 40
30 CALL 0
```

When I tried this program, it didn't work, and no wonder – the ON BREAK CONT command does not work on the 464. Is there another command that can take its place?
Gareth Figg, Surrey

I'm not sure where this rumour that you can't use a Multiface with a DDI-1 came from. Rest assured, they work together perfectly. *HackIt* is great as a development tool, or a device for finding pokes in games, but as a box for the novice it's absolutely no-go.

A good way to stop people pressing ESC (in the same way that ON BREAK CONT works) is to use the command KEY DEF 66,0,0,0,0 – this redefines the ESC key to produce nothing, the extra zeros accounting for SHIFT and ESC, CONTROL and ESC, etc. **Richard**

Load of rubbish

Help! My trusty CPC 464 datacorder has got a weird problem. It loads games like *Combat Lynx* no problem, but *F-16 Combat Pilot* and *Silent Service* only load to the title screen, and then crash. This crashing doesn't happen on my cousin's Amstrad, which is in a far worse state than mine! My tape heads are clean and aligned, so what do I have to do?

What does a 'Read error' message mean, and what's the difference between 'Read error a' and 'Read error b'?
David Vaughan, Ireland

It sounds suspiciously like you have a Multiface connected to your 464. If so, some games will detect its presence and refuse to work – the idea being that this prevents you from copying the game with the device.

Modern Multifaces can be switched off by pressing the red button followed by the R key. Older ones have a manual on-off switch. The oldest ones of all have to be physically disconnected from the expansion port (when the CPC is switched off) to let tricky games load. Follow the appropriate course of action, and loading the games shouldn't be a problem.

If you don't have a Multiface, I'm afraid it must be your tape deck. If, as you say, it is clean and aligned, then you'll need to contact a repair company, such as ERC (0733 371279).

'Read error' means exactly that: the CPC has come across an error trying to read data from the tape. 'Read error a' indicates a break in the tape, and is bad news – errors of this nature are usually unfixable. 'Read error b', on the other hand, indicates that the CPC did read enough data, it was just the wrong data. Try reloading a couple of times and you might have some more luck.

There is also a 'Read error d' (for some strange reason, there's no 'c'!) which indicates that the cassette block was too long. This is often encountered when cataloguing Multiface-saved files on tape – in this case, it doesn't actually indicate a loading problem. **Richard**

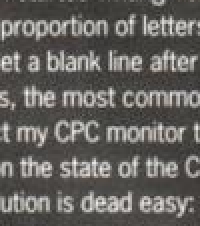
Top Tips

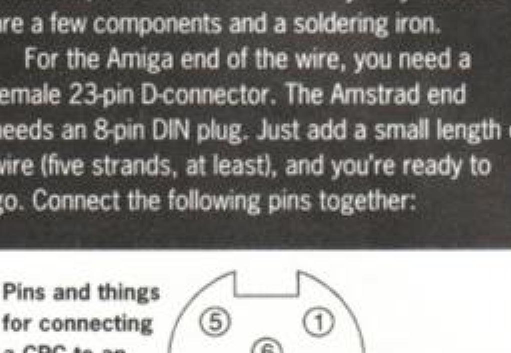
Lead of the month

When I started writing Techy Forum, a large proportion of letters were, "Why do I get a blank line after every line I print?" These days, the most common query is, "How do I connect my CPC monitor to an Amiga?" – a sad reflection on the state of the CPC market? Whatever, the solution is dead easy: all you need are a few components and a soldering iron.

For the Amiga end of the wire, you need a female 23-pin D-connector. The Amstrad end needs an 8-pin DIN plug. Just add a small length of wire (five strands, at least), and you're ready to go. Connect the following pins together:

Pins and things for connecting a CPC to an Amiga monitor.





- Amstrad pin 1 (red) to Amiga pin 3
- Amstrad pin 2 (green) to Amiga pin 4
- Amstrad pin 3 (blue) to Amiga pin 5
- Amstrad pin 4 (sync) to Amiga pin 10
- Amstrad pin 5 (ground) to Amiga pin 16

And that's all there is to it... you've just saved yourself almost ten quid. (By the way, the connections for a CM14, as supplied with the Plus, aren't exactly the same, but a quick look in your manual will illustrate the pin-outs for the Plus.) You can get the components from Maplin (catalogue available in any WH Smith's) or your local Tandy store.

Next month, we'll be taking a look at how to build yourself an adaptor for your Plus to use standard CPC peripherals.

Banking secrets

I was probing around the BANKMAN.BIN file on my CP/M disk recently, and found some undocumented RSXs. They are IVDU, IVDUO and IVIEW, and they are potentially extremely useful! First of all, how to install them from a disk with the Bankman file on it:

```
10 MEMORY &7FFF
20 LOAD "bankman.bin",&8000
30 CALL &8000,1
```

This will install both the hidden and the normal RSXs. Here are some interesting things that I've discovered about them:

1 There is an extra screen that ISCREENSWAP and ISCREENCOPY can access, which is dead handy. It is number zero, and resides in bank 0 (normal memory) from &4000 to &7FFF.

2 IVIEW will enable your screen to display either screen 0 or screen 1, and can display any in conjunction with ISCREENSWAP and ISCREENCOPY.

3 IVDU will enable you to write to either screen 0 or 1. For example, you could have a 'Please wait' message on one screen while drawing another.

4 IVDUO, when you have just used a IVDU,0 command, will let you write to any screen from 0, 2, 3, 4 and 5, while screens 1 and 0 are swapped over.

5 If you have just used an IVDU command, and you have a different IVIEW active, then you must reissue the IVIEW immediately since IVDU also issues an identical IVIEW.
Ross Younger, Edinburgh

Thanks, Ross – this was actually pointed out a good few years back in 'Hot Tips' (if you can remember that far back) but a good tip is well worth repeating, I always say.

Word count

When writing into a string variable, how would I extend the page in BASIC? At present, BASIC only allows five or six lines, then stops the cursor. I can now save and reload variables, but this problem is preventing me from writing a large amount like a word-processor.
Ian Chambers, Essex

A string variable can only hold 255 characters, maximum – as you've found. However, one feature of BASIC that you ought to learn about is the array. Instead of just one variable called a$, which has all the text in, you can have as many as you like. These are called a$(0), a$(1), a$(2) and so on.

First of all, you need to tell the computer how big the array is going to be – its DIMensions, if you like. So, if you're only going to need up to a$(50), then you would use the DIM command as follows:

```
DIM a$50
```

You can then set and alter each variable individually. The great thing about arrays is that you can pick which variable you want from them by using another variable: so, in a word-processor, if the current document line number is held in variable n, then a$(n) is the text from that line. Got that? Good. **Richard**

Famous five

1 Is it possible to draw on the border in BASIC? If so, how?
2 In CP/M how can I use the assembler called *SID* to produce Z80 machine code?
3 Do you know if there are there any emulators available for the CPC?
4 Is there anything that will upgrade the graphics capabilities of the CPC?
5 Can I run PCW software on my CPC 6128 in CP/M Plus?
Paul Isaac, Market Harborough

1 No. You'll need to learn machine code (and fairly advanced machine code, at that).
2 You don't. *SID* is a debugger (it stands for Symbolic Instruction Debugger; the CP/M 2.2 version has the much better name of *DDT*, Dynamic Debugging Tool). If you want an assembler, buy *MAXAM*, preferably on ROM. Alternatively, there are a few capable CP/M public domain options.
3 The only one we know about is *ZXM* which was reviewed in *AA* last month – so if you want to downgrade your CPC to Spectrum (and, strangely, some people do) contact Andy Wright on 021 443 4620. However, there is also a program that lets a PC emulate a CPC – at normal speed if you have a very powerful PC (a 486DX2/66, ideally, which is PC jargon for, "very fast and expensive indeed, yessir"). Theoretically, this means that any computer capable of emulating a PC – Amiga, ST, Archimedes, Mac – could emulate a CPC. It would just be very slow indeed…
4 Not really, although you could always sell your old CPC, buy a 6128 Plus, and use the B-ASIC program (or, if you just want to create art, Radical Software's *Smart Plus*) to access the new graphics features.
5 'Orthodox' programs that just run under CP/M Plus should be no problem. However, it's not quite that easy: the best PCW programs (*LocoScript 3, MicroDesign 3, Flipper, Rocket, Foreword*) delve deep into the machine's design and won't run on anything else. Some PCW programs will rely on the machine's RAM-drive, too (drive M:), which the 6128 doesn't have (it wasn't deemed necessary). **Richard**



TIP OF THE MONTH: It had to happen! We took one look at Simon's bedroom and it was voted this month's top tip immediately.

Command performance

RSXs are wonderful things. RSXs are not wonderful things if you call the initialisation routine twice. The firmware gets confused and puts its RSX workspace chain list into an infinite loop. Fine until you try to access any RSX, when the computer will crash.

To solve this, poke the first byte in your initialisation routine with &C9 (the Z80 opcode for RET) once the RSXs are initialised. This way, if you try to CALL the routine again, it will just return without trying to re-initialise the commands.

Copy-wrong

How do I get the copyright symbol, CHR$(164), to stay in REM statements? I need to use it to emphasise my copyright on a BASIC program I've written which will be going into the public domain. But every time I try to use it, it changes into 'KEY' for some strange reason (I think my Arnold has a warped sense of humour).
The Ace Coder, Newcastle-upon-Tyne

Well, not that warped. If it was really warped, it would replace it with 'HADDOCK'. But anyway, this is a quirk of 464 BASIC, which mistakenly tokenises graphic characters in REM statements (usually, you see, BASIC stores the command 'KEY' in memory as the number 164, to save space). However, characters within quotes are never tokenised. So, if you enter a line such as

```
10 REM '©1993 The Ace Coder',
```

it will stay as a copyright symbol.
Richard

No interruptions



I am writing a machine code program which, for reasons of timing, needs to run with interrupts off. This is all fine, except that two things don't work: the tune (which I created with your excellent covertape program *BooTracker*) and the firmware keyboard check routine. Will *Soundtrakker* tunes work okay, and is there any other keyboard checks I can use? It doesn't have to be too complicated, I only need to scan for the space bar being pressed.
Andrew Malvern, Rugby

Aaaargh! "…It doesn't have to be too complicated"? Programming keyboard input and output routines is a nightmare! Luckily, here's one ready for you to use – it even works on the Plus. Call this routine, and on return, the zero flag (Z) will be true if Space was pressed, false if it wasn't.

```
.scan
ld bc,&F40E: out (c),c
ld bc,&F645: ld a,&C5
             out (c),a
             out (c),c
ld bc,&F792: out (c),c
ld bc,&F645: out (c),c
ld b ,&F4  : in  a,(c)
ld bc,&F782: out (c),c
cp &7F: ret
```

It's a fast routine, too. In response to your other question: unlike *BooTracker*, *Soundtrakker* doesn't use the firmware to generate sounds, and so will work fine without interrupts. **Richard**

Sample kid

I'm interested in sampling, like you hear on all the latest records. I've seen some PD digitiser programs – are these any good? Why is it that the PD library list I have mentions '4-bit samples' as really cool, when my bruv's ST will do 12-bit samples? Would I be better off just using his machine?
Jonathan Lawson, Norwich

The CPC can't really cope with more than 4-bit samples, sorry to say – neither the sound chip nor the central processor are up to the task. The quality's okay, but by no means professional. In addition, real sampling requires some pretty hefty computing power to be able to play a sample on more than one note – power (and memory) that the CPC simply doesn't have.

You can buy the *RAM Music Machine* (try Datel London on 071-580 6460) for £50, which comes with a decent built-in sampler



A four-bit sample.

and some useful editing functions. There are also built-in sampled drums, which is just as well, because you can only store just over one second of sample in its memory!

If you can, use your brother's ST. If he gets grumpy, tell him that a proper budget sampler (the Akai S01) will cost £699 and that it's a thousand times better than his ST (true). He'll go off and sulk and leave you to it. **Richard**

Locked...

I somehow got into CAPS LOCK the other day and I couldn't seem to get out. Why not?
R Bates, West Yorkshire

Probably because you weren't actually in CAPS LOCK, but in SHIFT LOCK – which is toggled on and off by holding down CTRL while pressing the CAPS LOCK key. It's a relic from typewriters, and doesn't just convert letters to their upper-case equivalents, but also (rather less usefully) numbers and symbols to their shifted counterparts. It's handy to know, though, that SHIFT LOCK still lets the numeric keypad produce numbers – unless you've messed around with the key definitions or, for example, have Utopia installed (which messes them up for you).
Richard



Dense question

I bought a box of ten 3.5-inch high-density disks for my disk drive, because the salesman said that they hold twice as much. I should think so, they cost quite a bit more. Now I find that my CPC won't let me format to any more than the standard 792K even if I use ROMDOS. The shop does not want to give me a refund because they say it works on their IBMs. Have I been done?

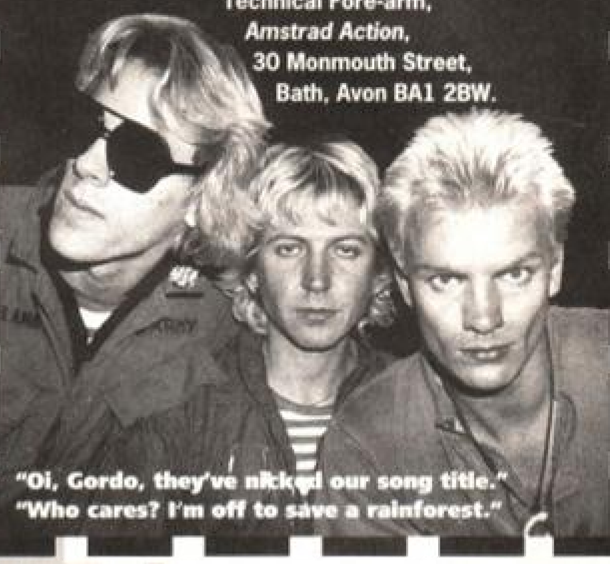
Also, I want to start a PD library, so I need some way of copying disks. I have 256K extra memory but none of the disk copiers I can find will use it. I thought that if they did, it would mean no disk swapping so I could copy software on to 3.5-inch disks too. Is there a program that will do this or any easy modification I can make to existing copiers?
DG Thorne, Thurrock

You need a high-density disk drive to be able to use high-density disks to their full advantage, and they're not available for the CPC: no disk operating system available, in fact, can cope with more than 800K anyway. You should be able to get your money back if you told them in the first place that you wanted to use them on a CPC. If the shop still refuses to give you a refund, try waving this copy of *AA* around (they won't be frightened by this article, but if the covertape flies off the front and catches them in the eye, it won't half hurt).

It is possible to use your 256K expansion to copy disks. The public domain copier *JL-Copy* comes with a 256K version, which will work with a normal DK'Tronics expansion – although not with a silicon disk. Trawl some friendly PD libraries for a copy. **Richard**

Sending out an SOS

If you're in a bit of a pickle, don't stick a message in a bottle because the the *AA* office isn't anywhere near any large expanses of water, so your plea will go unheeded (but just might be found by a lost tribe on a desert island and worshipped as a God – maybe). Instead, send your technical queries to:
Technical Fore-arm,
Amstrad Action,
30 Monmouth Street,
Bath, Avon BA1 2BW.



"Oi, Gordo, they've nicked our song title." "Who cares? I'm off to save a rainforest."

Buffer blues

The CALL at &BC77, to open a file for input, is fine except that it needs a 2K buffer. I really haven't got room in my program for this. Have you got any suggestions? Or, alternatively, is it possible to use the 6128's extra memory to put this buffer in? There does not appear to be any provision for this.
Nigel Adams, Brentwood

First of all, if you're working on disk and using CALL &BC83, CAS IN DIRECT, as opposed to reading in the file character by character, you won't actually need the 2K buffer, despite the impression given by the firmware manual.

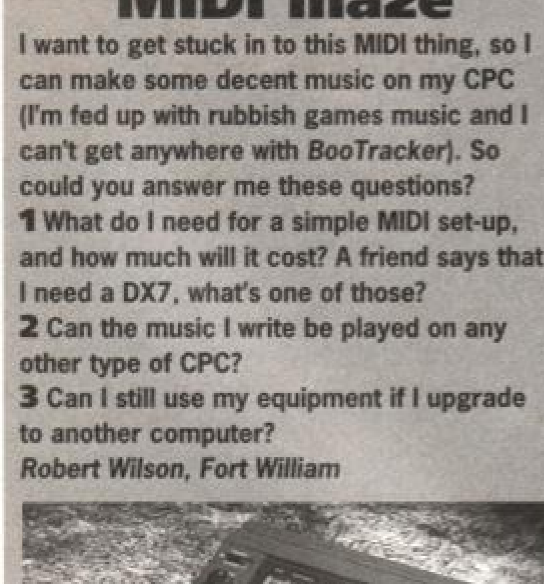
If you need to read in a file character by character, you could always use the screen memory (address &C000) for the buffer. The display will be a bit corrupted, but if you set all the inks to the same colour, it won't appear. One word of warning, though. This method falls down if a disk error occurs, as it will be printed on the screen and corrupt the data – and, if you've set all the inks to the same colour, the user won't be able to see the message anyway.

Using the extra banks, then, is a satisfactory solution. The safest way is to place your buffer at &4000 (where the extra memory is mapped in), then enable the extra banks before every CALL to the firmware disk handling routines and disable them afterwards. To enable the extra banks, use ld bc,&7FC4: out (c),c (or &7FC5, &7FC6 or &7FC7 for a different 16K block), with ld bc,&7FC0: out (c),c disabling.

This obviously won't be too practical if you're using the memory from &4000 to &7FFF to execute your code in, so you could use &7FC1, which maps in extra memory to &C000 (screen memory). The screen won't appear to be corrupted, but you'll encounter the same pitfalls with error messages as before. **Richard**

MIDI maze

I want to get stuck in to this MIDI thing, so I can make some decent music on my CPC (I'm fed up with rubbish games music and I can't get anywhere with *BooTracker*). So could you answer me these questions?
1 What do I need for a simple MIDI set-up, and how much will it cost? A friend says that I need a DX7, what's one of those?
2 Can the music I write be played on any other type of CPC?
3 Can I still use my equipment if I upgrade to another computer?
Robert Wilson, Fort William



A Roland Sound canvas, courtesy of our mates down on Future Music. Ta.

1 First of all, you'll need an interface and sequencer for your CPC. The *EMR Miditrack Performer* – a bundle comprising the necessary MIDI interface and 8-track sequencing software – costs £100 (0702 335747). You'll then need a MIDI instrument to actually generate the sounds and a keyboard to input them with: look in our sister mag, *Future Music* (hi, Maff and Dave R) for info on all this kind of thing.

A DX7 is a combined keyboard and sound-generator from Yamaha, which was very popular in the early 80s. It features awesomely colossal bass sounds, but many of the other sounds are a bit dated and unrealistic by today's standards. Second-hand, expect to pay £250 to £300. If you can afford it, save up for a Roland Sound Canvas (from £250) or a Yamaha TG-series module instead – but remember, with these, you'll need a keyboard as well.

2 Not unless it has the same MIDI set-up as yours, which seems fairly unlikely. However, if you buy one of the new 'General MIDI' sound modules (such as the *Sound Canvas*), then the tunes you play on this can be played on any other General MIDI module.

3 You can still use the keyboard and sound module, but the sequencer and interface are CPC-only: some computers (eg, the Atari ST) have a built-in MIDI interface, and loads of powerful sequencing software available for them. **Richard**

Amstrad CPC6128 with colour monitor, Star LC-10 printer, manuals, many games, joystick, Music Machine, Money Manager, Mini Office 2, French Mistress, magazines issues 40-90. All tapes. £250. Tel 0444 453300.

Wanted

Modem and/or monitor. Modem at least 24000 baud. Monitor CTM644. Could do with disks too. Jonathan Wislon, 124 Gosford Road, Armagh BT60 2DE, Northern Ireland. 0861 507265.

X-Press on disk for Stop Press wanted urgently. Will pay good price. Phone 0887 820599 evenings, weekend. Graeme.

PD programs for new PD library wanted. games/utilities. Plus pen pals, male or female, for game swaps and programmable info swaps. Prompt replies. Contact J Jones, 41 Westmorland Avenue, Newbiggin By The Sea, Northumberland, NE64 6RN.

I want many old arcade games for the Amstrad CPC 464 like Arcadians, Croaker and any others you can think of like Chuckie Egg. Phone Galway Spencer Wilson on 091 90390.

Old game for Amstrad 464 called The Wild Bunch by Firebird Software. Will pay £5. contact Jazz on 0203 597289 after 5pm.

Poolswinner, Premier 2, Kursk, Clash of Armour and Cannae 216BC wanted on tape for CPC464. Will pay good prices. Paul Suttle, 11 Bath Place, Margate, Kent CT9 2BN.

Power-Up wanted (on disk). Will swap for NY Warriors (disk) Turrican 2, Forgotten Worlds, Metropolis, Ghosts'n'Ghouls, Street Fighter, 1943, Bionic Commando (all tape). Write to Sean Doogan, Meinleitrim, Knocknagoshel, Tralee, Co. Kerry, Eire.

Any machine with a working disk drive wanted desperately. No monitor. Will pay around £25. Computer need not work. Phone Rob on 0816 725295.

Wanted for Amstrad 6128, Kick Off 2 and Emlyn Hughes International Soccer plus Final Fight and Street Fighter. Willing to offer a large amount. Contact 0548 857157.

All kinds of public domain urgently required. Cassette only. All cassettes will be returned as soon as possible. Free. Mark Caldwell, 356 Kenley Close, Liverpool L6.

Turtles 2 the coin-op or Skull and Crossbones. Will swap either Indiana Jones and the Temple of Doom or Popeye 2. Send SAE to 15 Culver House, Princeton Street, London WC 4BG.

Games Codename Matt and Operation Wolf. £2.99 each. CPC464 cassette. Call James Moyse on 0626 853021 or send an SAE to Edenberry Cottage, Rock Road, Cudleigh, Devon TQ13 0JJ.

Penpal wanted. Amstrad 464 Plus owner. Will swap and lend games. Male aged 13 to 16. Mark Maguire, Corlouhaloon, Corranny PO, Roslea, County Fermanagh.

ROMbox wanted. If possible swap for £30-worth of games including Titus the Fox (disk), narc, (disk), Turrican (tape). Andy Armitage, 102 Western Road, Goole, Yorkshire DN14 6RD. Tel 0405 760858.

Required urgently – Lemmings, Elite, Venom, Boggitt or any other 6128k (disk) games. Reasonable price payed. Write to Antoinette O'Donnell, Spittal, Ballylanders, Co Limerick, Eire. Also tape lead wanted.

Penpal wanted for Amstrad CPC464 user aged 7-9. Write to Matthew Thomas, 13 Barry Walk, Rogerstone, Newport, Gwent NP1 0AS.

Laser Squad on disk wanted (including extra missions) for CPC. Will swap for Double Dragon, Fast Food and Spook School – all tape originals. Tel 0380 810782.

Gothic on tape or disk for Amstrad 6128. Tel 0432 760463 any time with price wanted.

Jewels of Babylon, Lord of The Rings, Hobbit and Famous Five on tape. Will swap from list. Tel: 0489 578298.

PD adventures for new adventure PD library. Send on disk or tape plus SAE to Moonshine PD, 19A Kenyon Avenue, Wreckham, Clwyd LL11 2SP.

Wanted for Amstrad CPC464, 64K memory expansion, plus Genius mouse on tape, plus interface. Also does anyone have Pacman on tape for the 464? Phone 0738 52859.

Lemmings for Amstrad wanted. Will swap for Indianna Jones, Paperboy, Flintstones and Kwik Snax Dizzy. Write to Martyn Tulloch, Braefield, Lerwick, Shetland 2E1 0SS.

Copy of Lemmings on tape wanted. Will send tape or swap original for Italia 90 and Tau Ceti. Phone Max on 0922 612382 between 4pm and 6.30pm.

Arkanoid cassette CPC464. Will pay or swap. State price want(s). Call Jeff – 0469 574911 or write to 3 Hadleigh Road, Immingham, Near Grimsby, South Humberside DN40 1EZ. Thanks. Compilation acceptable.

GX4000 with cartridges. Will swap for about 100 CPC tapes worth £400 plus. Phone Jeff 0684 275476.

Games for Amstrad CPC6128 (3-inch disks). Send lists to: Caroline Buckley, 109 Essendyke, North Bretton, Peterborough PE3 8JD (cheap).

Graphic Adventure Creator booklet in good condition wanted. Will pay £2. Ring David on 0889 562887.

Wanted desperately, card games of cribbage, solo whist, either disk or cassette or any information on where I could get them. From reasonable price paid. Ring Bob, Scarborough 0723 515863 after 6pm.

Help wanted on Elite as I can't do a thing. I need help on docking and trading. Contact Matthew, 3 Broadlawn, Leigh-On-Sea, Essex SS9 4QZ.

Urgently wanted! Cassette copy of Select Software's Football Follower. Will pay cash or swap for Cheetah's Amdrum. I'll also pay postage. Contact Ian on 0376 583188.

Terminator 2 (disk) or Lemmings (disk). Will swap for Hudson Hawk (disk) and Mindfighter (tape). Phone 0270 627473.

Dart scanner wanted for CPC464. Also wanted CP/M version of Turbo Pascal Version 4. Please ring 0703 402155 evenings and ask for John.

Mini Office 2 (Disk), in exchange for Gauntlet, The Untouchables or Tusker. Please write to Tracy Willis, 22 Bittacy Road, Mill Hill, London NW7 1BP.

Early AA magazines. Issues 1-5, 7-9, 11-13, 18 and 20. Any condition considered. Best price given for clean undamaged copies. Ring 0332 751657 after 6pm weekdays.

Manchester United original not Europe wanted on tape for CPC464. Swap or will pay. Phone Dave on 0753 685846 or write to Dave Green, 4 Pickins Piece, Horton, Berkshire SL3 9NS.

Bounder cassette. Will swap for Monty Python's Flying Circus or cash. Also games for sale from 75p. Phone Richard on 0434 674401 (not weekends).

6128 user and service manuals or reasonable copies needed. Ring 0302 709512.

Desperately wanted! Sprites Alive Basic and compiler package for the CPC464. I don't care if it's a copy. Phone 081 647 0722 after 4pm.

Elite on tape would be greatly appreciated. Will pay reasonable price. Write to Ross Robertson, 1 Backdykes Terrace, Falkland, Fife KY7 7BA.

Other

Homebrew Software – Pacgun, a game of skill. Send disk/tape and SAE and £2 in stamps (Irish/English) to Richard Bannister, 76 Stillorgan Wood, Stillorgan, Dublin, Ireland. NOT PACMAN!

Tape PD at great prices. Just send an SSAE to Power House PD, 5 Pentland Road, Slough, Berkshire SL2 1TL for a free catalogue.

Contacts wanted from all over the world for swapping, etc. Write to Denis Kondopoulos, Chora Naxos 84300, Greece.

Swap Ninja Remix, Rastan, Gryzor, Thunder Cats for Teenage Turtles, Final Fight, Night Breed (*then the writing got so bad we really couldn't work out what the rest of this ad said at all, so tough luck, Carp – that's the nearest we could get from the scrawl – Dave*).

Domain PD library. Has over 200 disk sides. Fast, reliable service guaranteed. Send SAE or 3-inch disk for stock list, to B Snell, 65 Bath Road, Southsea, Portsmouth PO4 0HX.

Posters, cartoons, latest game reviews and many other things inside (*inside what? – Dave*). To get your copy send 15p and an SAE to Scott Baker, 54 Freeground's Road, Hedge End, Southampton, SO3 4HW.

MPD Software – over 130 selections of the best PD around. For a free catalogue list send a 24p stamp to 23 Nobes Avenue, Bridgemary, Gosport, Hampshire PO13 0HS NOW!

Thank You to everyone who wrote in for Enterprise fanzine (previously called The Last Outpost). Issue one available at 30p plus 18p stamp. Enterprise, 1 Backdykes Terrace, Falkland, Fife KY7 7BA.

Swap Software – we're a group of six friends. Huge lists, only disk and easily English please. Worldwide contact: Angel Pascul, C/ Antonio Cumeilla Num. 29 3°C Madrid 28030, Spain.

Amstrad Express: The only fanzine with a covertape. Offers news, reviews and much more. Only £1.50. Make all cheques payable to S A Sandhill. Send orders to 17 Cromer Road, London SW17 9JN.

Services

United Amstrad User Group. Free PD. Book. Library. Bi-monthly magazine and more. Contact Gordon Wolliscroft, 2 Wrenbeck Drive, Otley, West Yorkshire LS21 2BR for more info. Please enclose a stamped self-addressed envelope.

New tape PD library requires new software, 64K only. Send your software to Soft PD, 8 Chalfont Road, St John's Estate, Colchester, Essex CO4 4NT.

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Bug busting



Warning! Warning! Warning! You are entering the extermination zone. Dr H Happening, infestation eradication expert extraordinaire (and a close friend of Simon's) reveals the trade secrets of stamping out bugs that've burrowed their way into your Basic programs.

Bugs, yeuch, don't you just hate 'em? Somehow, no matter how careful you are, no matter what precautions you take, no matter what lengths you go to, they always creep in. Give 'em half a chance – or even a fraction of half a chance – and they weedle their way in to a little niche or crack, then sit there, waiting patiently for the moment they can strike; the moment you try to actually run your program. Up pops one of those blimmin' error message, meaning that the bugs have struck and rendered your hard work useless. They must be eliminated. They must be exterminated. Zey must be totally eradicated. And ve haf zee meanz to do it – nyah–ha-ha-ha!

Uh, sorry. Got a bit carried avay... sorry away. But the thing is, you can beat the bugs, and I'm here to show you how. But it helps if you know what the error messages mean first.

So what follows is a list of the most common error messages that your CPC might chuck your way. I'll explain what they mean, how you can spot where you've gone wrong and how you can correct your mistakes... and stamp out zose nasty little bugz forever! (*Simon, has anyone ever told you you're a worse actor than an Italian professional footballer? – Dave*).

Remember that all these error messages will be followed by a line number which tells you where the computer got to when it threw a wobbly. The actual fault may not be in that line, though; for example, when there is something wrong with a FOR NEXT loop. But it will usually be somewhere near (or at least it should, unless you program in a completely disorganised way, in which case you deserve to get bugs, frankly).

Desperate?

There will always come a point when you're really desperately searching through a listing over and over again, without being able to spot a single error. There is one more course of action left open to you. Simply go through the program line for line, following everything the CPC would do with a pen and a bit of paper. Believe me, you'll soon see your mistakes staring you right in the face once you're looking at a program from the CPC's point of view!



Array already dimensioned

Imagine you've been dimensioning a variable array, using a command such as `DIM a$(16)`. This is all very well, but if later in the program you re-dimension it, using another command, for example `DIM a$(20)`, you'll run into problems. There is a very simple way to overcome these problems, though, using the ERASE command. This will simply remove the variable from memory, allowing you to re-dimension it as new.

Broken in

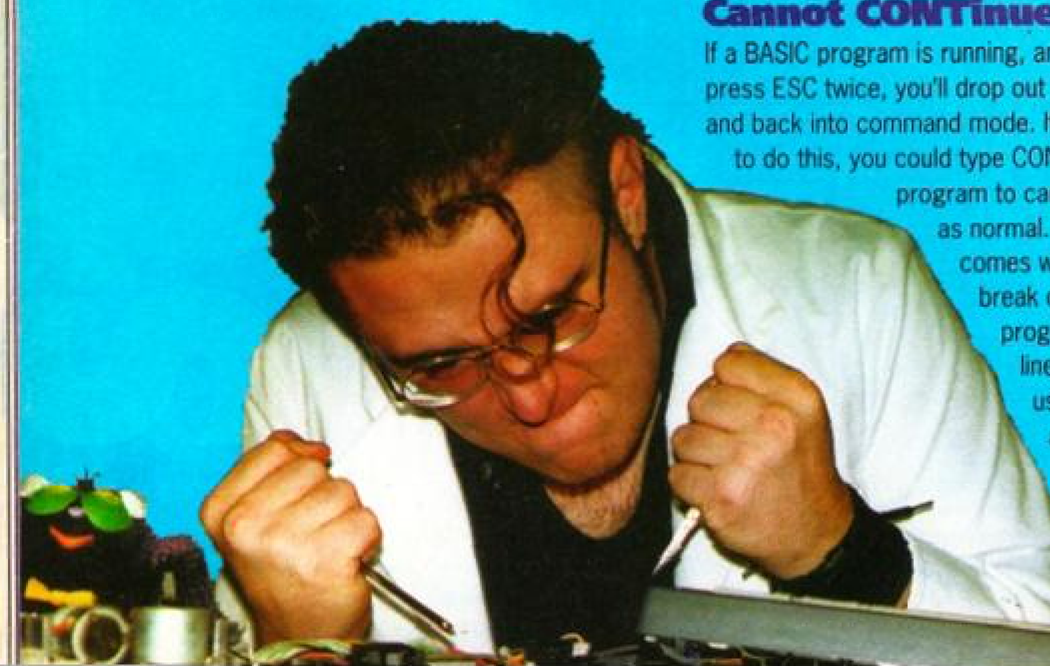
Dead simple one, this, as it's more like one of those irritating messages the computer will give you to tell you what you've just done (as if you didn't know when you did it). It basically occurs when you press ESC to interrupt your CPC when it's trying to load something. The reason it's documented is so that you can detect it from within a program.

If you want to stop people pressing ESC to interrupt a load, the following command should do the trick:

```
KEY 66,0,0,0,0
```

Cannot CONTinue

If a BASIC program is running, and you press ESC twice, you'll drop out of the program and back into command mode. If you didn't mean to do this, you could type CONT to get the program to carry on working as normal. The problem comes when you want to break out of the program to change a line – if you try and use CONT afterwards, you won't have much luck, or, in fact, any luck.



DATA exhausted

You could set up a DATA statement with, say, 10 names in it. If you tried to `READ 11` names from the list, on the eleventh READ, guess what message you'll get...?

Direct command found

Strange one this – it only occurs when you save BASIC programs out as ASCII files (using `SAVE "filename",a`). Even though the program will have been written out as a text file as opposed to a BASIC file, your clever CPC can still read it back in. However, if you try to load an ASCII file that has a direct command (`PRINT "Hi"` as opposed to `10 PRINT "Hi"`), your CPC will moan.

Division by zero

There is a point in mathematics when things become silly, and the results venture into the realms of infinity (*sounds like a very bad episode of* Star Trek *– Dave*). One such time is when a number is divided by zero. Don't do it – it won't work.



EOF met

If you've opened an ASCII file with `OPENIN`, and you're reading it in using `INPUT #9`, you'll get along just fine. If you try to read more variables (as that, in effect, is what they are) than are available in the file, you'll get the `EOF MET` message, EOF standing for End Of File.

File not open

You'll also get the EOF message if you try to use an `INPUT #9` or a `PRINT #9` without using `OPENIN` or `OPENOUT` to set up or open the file beforehand.

File already open

This comes about by trying to read two files at once (using `OPENIN`, etc). Feel free to have a read file and a write file open at the same time, but you can't have two read files or two write files.

File type error

It stands to reason that only certain files can be used in certain ways. For instance, if you had an

ASCII file, and you tried to load it using something along the lines of `LOAD "filename",&C000` (loading it as a binary file into screen memory), things start to go wrong.

Improper argument

This one is very general, and probably wouldn't help you much if you were trying to track down an error. It basically means that the parameters you've given a command are wrong in some way.

All you have to do to track down an improper argument is go to the line the CPC points to in the error message, and read through it. The problem will nearly always be on that line, and will always be staring you in the face.

Invalid direct command

With most commands, you can use them in direct mode as well as in a program. There are, however, some commands that will only work in program mode, as they're impractical directly. You will never experience this problem within a program, for obvious reasons, but you might have been spooked by it in the past, so it's worth mentioning.

Line does not exist

This error occurs if you try to execute a command such as `GOTO 100` where there isn't a line 100.

Bear in mind that when the `RENUM` command is used line numbers at the end of commands such as `GOTO` are altered so that they still correlate to their original line numbers.

Line too long

When your BASIC program is stored in memory, it is tokenised (*you mean it turns into an overlong book about hobbits? – Dave*). This means that instead of storing the command `PRINT` as five letters, it's stored as the number `&BF`. This helps compact your program so that it takes less memory. There is, however, a limit to the length of each line even when it's tokenised. It would be very unusual if you couldn't split a line this long into two smaller lines.

Memory full

This means you've defined too many variables, your program is too long, or something is taking up too much memory. To fix this type of problem, check that there isn't any way you can cut down on the amount of variables you've `DIM`ensioned – they're the things that *really* take up the space.



NEXT missing

This one's really easy – it pops up if you have a `FOR a=1 TO 10`, but no `NEXT a`.

When you're trying to sort out a problem like this, the main thing to bear in mind is that, for example, in the following program:

```
10 FOR a=1 TO 16
20 FOR b=1 to 10
30 PRINT a,b
40 NEXT a
```

the `NEXT b` command would have to occur between lines 21 and 39, ie, before line 40.

Operand missing

Another simple one! If you issue a command that needs to be followed by parameters, and you don't provide them, your CPC won't like it, and will probably tell you about it. All you have to remember is that there are very few commands that have no parameters slapped on the end.

Overflow

Being an 8-bit machine, there is a limit to the size of numbers your machine can process. If the result of any calculation exceeds 1.7E38, poor old Arnie can't cope, and gives up.



Would you trust this man with your CPC?

RESUME missing

If you're using an `ON ERROR GOTO` command, you have to use the `RESUME` command to jump back into the main program loop after doing whatever you wanted to do, instead of ending the program.

String expression too complex

As most of you will know, the CPC has a fairly flexible string handling system (enabling stuff like `"Wibble &"+HEX$(s(7),2)+" zazam "+val(x$(y))` to be used). If you start pushing your luck too much, though, and set up some far too complex stuff, bear in mind your computer's limitations. Try not to put anything inside any more than 16 brackets.

Type-In Codes

Something that might save you quite a bit of bug-hunting time are the TypeChecker codes we print alongside listings in AA. For a full explanation of how these codes work, you'll find a box in Venture Forth called TypeChecker. It really is worth a read, as it'll help you out no end when you're using any listings featured in these hallowed pages. So take a look on page 18 right away – I'll meet you over there...

String space full

Really easy one, being caused by defining too many string variables. Cut down on them by pruning your `DIM` commands

String too long

Always bear in mind that the maximum length for a string (such as `a$`) is 255 characters.

Subscript out of range

You'll get these problems if you use a command or expression, but state a number that is too high (such as issuing a SOUND command but giving tone values that are either too high or too low).

Syntax error

You'll see (or have seen) this more times than any other message. It means the CPC can't recognise what your instruction is; you've done something wrong but even it doesn't know quite what.

Type mismatch

To avoid type mismatches, make sure all brackets that are opened are closed so that your arrays are symmetrical (everything that's opened is closed).

Unexpected NEXT/WEND/RESUME/RETURN/WEND

You'll come across an `Unexpected` message when, for example, the program encounters a `NEXT` a command before a `FOR` command. The same applies for `RESUME` before `ON ERROR`, `RETURN` before `GOSUB` and `WEND` before `WHILE`.

Unknown command

You'll experience an unknown command message if you try to use an RSX command that doesn't exist. As an example of an RSX command, try typing `|BASIC`, and see what happens. Disk drive owners have even more RSXs to watch out for.

Unknown user function

This one's along the same lines as the unknown command message, but applies to user defined functions (see `DEF FN` in your manual).

WEND missing

I think the error message says it all really – make sure that for every WHILE command, there's a WEND command to match it.

There ain't no bugs in this nest

One way to avoid bugs to use a technique called nesting. Here's an example:

```
10 FOR y=1 TO 10
 20 FOR x=1 TO 10
  30 PRINT x,y
  40 PRINT
 50 NEXT x
60 NEXT y
```

Pretty impressive, huh? No, I'm not talking about the program, I'm talking about the way the lines are tabulated. It may just look like it's a bendy line, but it's really a method where every time you enter a new loop, you move the line one space to the right. This helps you see very clearly where each loop starts and finishes, and serves one other important purpose.

If you had omitted line 50, it would have looked like this:

```
10 FOR y=1 TO 10
 20 FOR x=1 TO 10
  30 PRINT x,y
  40 PRINT
 60 NEXT y
```

This version travels to the right, but doesn't go all the way back to the left. This clearly points out the bug – there's no `NEXT x` in the listing.



Type-Ins

There's a change of format this month, but don't worry! Simon's still found a funky listing for you to type in, but there's a little extra something for you as well...

The Gamer's Trainer

Here's a real test of your list-typing stamina. Rowland Jack from Cambridge has just sent us a program designed to help hardened games players improve their individual playing skills. Even if you don't play games, this is the program to use to sharpen your reflexes, mental agility, co-ordination and just about everything else that builds a superhuman.

Welcome to the Workshop, or what are these boxes doing all over the place?

Welcome to Workshop, a new angle for the Type-Ins you know and love so much. Worry ye not, as the program itself remains untouched and typeinable (*odds on, that won't be in the next edition of the Oxford English Dictionary – Dave*), but if you look over the next few pages, you'll see a series of boxes and highlighted bits. If you just want to get on and type in the program, ignore all of that stuff, but you could be missing out...

Starting this month, we'll be taking a program from Type-Ins (*Hobson's choice, this month – Dave*), and dissecting it, explaining what individual sections are actually doing, so that you can see them in the context of a program as opposed to an individual command in an isolated form.

Anyone unfamiliar with BASIC needn't worry, as this month we'll be starting with the very basics. This doesn't mean we're going to spend too much time dwelling on simple stuff, as we have a hell of a lot of ground to cover. And with all this work to do, I'd probably better get on with it.

One final thing – Workshop is not supposed to stand alone. Use it in conjunction with your CPC manual. Oh, and try using some of the highlighted commands on their own (not in a program), and you should get an even better idea of what's going on.

Finally, it's worth mentioning that from now on, seeing as everybody's got an Assembler, you can send along to *AA* your Assembly listings so that everyone else can use in conjunction with the amazing *Zapp*.

```
BAIP 10·MODE·2
GAJC 20·DIM·a(4),b(12),c(13),j$(6)
JAAN 30·INK·1,25:INK·0,1:BORDER·6:PEN·1:PAPER
     ·0
KADE 40·LOCATE·30,1:PRINT"THE·GAMER'S·TRAINER
     "
PAOI 50·LOCATE·1,1:PRINT"Version·2.1":LOCATE·
     73,1:PRINT"May·1993"
JAFD 60·LOCATE·33,2:PRINT"by·J.R.N.·Jack"
IAJF 70·LOCATE·18,4:PRINT"Options:"
DABG 80·RESTORE·140
DAHI 90·FOR·n=1·TO·8
KACF 100·LOCATE·30,2+n*2:READ·a$:PRINT·n;")·"
     ;a$;
HAPO 110·IF·n<6·THEN·PRINT"·Tests";
CAAE 120·PRINT
BADP 130·NEXT
JCJA 140·DATA·Reflex,Timing,Coordination,Peri
     pheral·Vision,Mental·Agility,Save·Result
     s,Load·Results,General·Assessment
HAAB 150·a$=INKEY$:IF·a$=""·THEN·150
DAOA 160·a=VAL(a$)
KAKH 170·ON·a·GOTO·190,2660,480,1170,1720,496
     0,5010,3130
CAIK 180·GOTO·150
FBPL 190·LOCATE·20,21:PRINT"Test·reflexes·to·
     (S)ound·or·(L)ight·impulses?·";
HAIA 200·a$=INKEY$:IF·a$=""·THEN·200
DALP 210·a$=UPPER$(a$)
HAMJ 220·IF·a$<>"S"·AND·a$<>"L"·THEN·200
DACC 230·PRINT·a$;
DBLA 240·IF·a$="S"·THEN·b$="hear·a·loud·beep"
     ·ELSE·b$="see·a·small·blob"
NCGL 250·LOCATE·1,23:PRINT"·····When·the·test
     ·begins·you·will·see·a·blank·screen.·Aft
     er·a·random·period·of·less·than·three·se
     conds·you·will·";b$;
PAEI 260·LOCATE·50,24:PRINT".·Press·the·[SPAC
     E·BAR]·as·fast";
ACBD 270·LOCATE·1,25:PRINT"as·you·can.·You·wi
     ll·be·tested·twenty·times.·Press·[COPY]·
     to·start·the·test."
GAPG 280·WHILE·INKEY(9)<>0:WEND
CAPH 290·tot=0
DAOM 300·FOR·a=1·TO·20
BAGJ 310·CLS
DACM 320·n=RND*800+100
CAGJ 330·t=TIME
GAFD 340·IF·TIME<(t+n)·THEN·340
DBBP 350·IF·INKEY(47)=0·THEN·LOCATE·35,12:PRI
     NT"C·H·E·A·T·!":FOR·z=1·TO·1500:NEXT:GOT
     O·310
CBHB 360·IF·a$="S"·THEN·SOUND·7,100,20,15·ELS
     E·LOCATE·40,12:PRINT·CHR$(143);CHR$(143)
CAKJ 370·t=TIME
GACK 380·WHILE·INKEY(47)<>0:WEND
EABF 390·u=(TIME-t)/300
EAPD 400·tot=tot+u
NAKM 410·IF·a$="S"·THEN·souref=tot·ELSE·ligre
     f=tot
CBMJ 420·LOCATE·25,22:PRINT"Response·time·was
     ";ROUND(u,2);"seconds."
FAML 430·FOR·n=1·TO·1500:NEXT
BAHP 440·NEXT
OBMI 450·LOCATE·8,24:PRINT"Average·response·t
     ime·was";ROUND(tot/20,4);"seconds.·Press
     ·[COPY]·for·menu."
GAPG 460·WHILE·INKEY(9)<>0:WEND
DAEJ 470·CLS:GOTO·40
MBFH 480·LOCATE·10,21:PRINT"Test·coordination
     ·of·(L)eft·hand,·(R)ight·hand·or·(B)oth·
     together?·";
HAIC 490·f$=INKEY$:IF·f$=""·THEN·490
NAKN 500·f$=UPPER$(f$):IF·f$<>"L"·AND·f$<>"R"
     ·AND·f$<>"B"·THEN·490
KAHI 510·IF·f$="L"·THEN·b$="your·left·hand"
LABA 520·IF·f$="R"·THEN·b$="your·right·hand"
LAJO 530·IF·f$="B"·THEN·b$="both·of·your·hand
     s"
DALC 540·PRINT·f$;
FCJH 550·LOCATE·1,23:PRINT"······The·first·el
     ement·consists·of·"+CHR$(34)+"waggling"+
     CHR$(34)+"·then·there·is·a·test·in·which
     ·you";
CCGM 560·LOCATE·1,24:PRINT"must·press·four·ra
     ndomly·chosen·keys·in·sequence.·Don't·fo
     rget·that·you·have·to";
BBEB 570·LOCATE·1,25:PRINT"use·"+b$+".·Press·
     [COPY]·to·continue."
GACH 580·WHILE·INKEY(9)<>0:WEND
BAAK 590·CLS
JAMA 600·LOCATE·33,1:PRINT"WAGGLING·TEST"
HAHK 610·IF·f$="B"·THEN·a$="N":GOTO·680
BBIO 620·LOCATE·20,3:PRINT"Do·you·want·to·use
     ·a·joystick·(Y/N)·?·";
HAGB 630·a$=INKEY$:IF·a$=""·THEN·630
EACA 640·a$=UPPER$(a$)
HACL 650·IF·a$<>"Y"·AND·a$<>"N"·THEN·630
CAOO 660·PRINT·a$
```

Lines 10-30

These lines do the early setting up work, such as clearing the screen, and changing the colours. We'll deal with line 20 next month. But for now:

Line 10 uses the MODE command. The CPC has three modes, numbered 0, 1, and 2. Try typing MODE 0 on its own, and seeing what happens. In this case, we're using mode 2, so type MODE 2. You'll notice that the lettering is very thin. This is so you can now fit 80 characters (letters) on one line as opposed to the normal 40.

Line 30 is arranged a little strangely, so I'm going to work through it in a slightly different order. Before we look at any of the commands in this line, though, I'd like to explain the Amstrad's colour system.

Imagine you've got 26 felt tip pens, numbered 0-26. Out of these, you can choose one background colour, and one pen colour. In effect, you've just chosen two pens, one of which you use to colour in your whole sheet of paper, while the other one you use as a normal pen. First up is the PAPER command, then. In effect, all you're doing is stating that the pen you want to colour the background is pen 0, and the PEN command states that the pen number is pen 1.

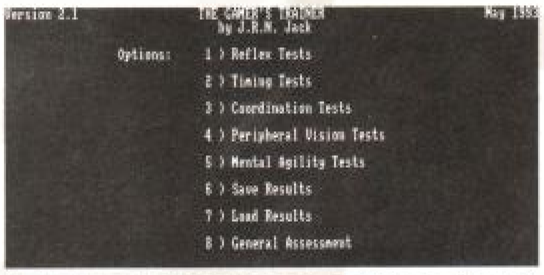
Next, then, are the ink commands. In this case, we're saying, "make pen number 1 and use colour number 25." Therefore we get the command INK 1,25. You can probably guess what INK 0,1 means, then.

The only unfortunate part of all this is that the example we're using here only sets up the inks to what they normally are, except with a slightly softer shade of yellow. Ah well, c'est la vie.

Line 870

Dead simple one, this, but I just thought you might like to know. The CLS command simply clears the screen. Unlike the MODE command, it doesn't change letter width, it just clears the screen. That's it.

```
HBDH 670·IF·a$="Y"·THEN·b$="Waggle·the·joystick·left·and·right":left=74:right=75
FBED 680·IF·a$="N"·THEN·b$="Press·[R]·and·[T]·alternately":left=50:right=51
CBBC 690·b$=b$+"·as·fast·as·possible.":LOCATE·(80-LEN(b$))\2,5:PRINT·b$;
IBEI 700·LOCATE·14,8:PRINT"The·test·lasts·twenty·seconds.·Press·[COPY]·to·begin.";
GANG 710·WHILE·INKEY(9)<>0:WEND
KACI 720·LOCATE·25,12:PRINT"Repetitions·:"
HANH 730·LOCATE·32,15:PRINT"Time·:"
HAGB 740·rep=0:k=left:t=TIME
GAHP 750·LOCATE·38,12:PRINT·rep;
GADG 760·tim=INT((TIME-t)/300)
GAPP 770·LOCATE·38,15:PRINT·tim;
FAAG 780·IF·tim=20·THEN·820
CBPJ 790·IF·INKEY(left)=0·AND·k=left·AND·INKEY(right)<>0·THEN·k=right
FBIP 800·IF·INKEY(right)=0·AND·k=right·AND·INKEY(left)<>0·THEN·k=left:rep=rep+1
CAOK 810·GOTO·750
OALG 820·LOCATE·28,20:PRINT"Press·[COPY]·to·continue."
CBBG 830·IF·f$="L"·THEN·replef=rep:IF·a$="Y"·THEN·jylef=1·ELSE·jylef=0
CBJI 840·IF·f$="R"·THEN·reprig=rep:IF·a$="Y"·THEN·jyrig=1·ELSE·jyrig=0
IAID 850·IF·f$="B"·THEN·repbot=rep
GADH 860·WHILE·INKEY(9)<>0:WEND
BABK 870·CLS
JAPB 880·LOCATE·33,1:PRINT"SEQUENCE·TEST"
EAMM 890·ERASE·a:DIM·a(4)
DADL 900·FOR·n=1·TO·4
FAPF 910·a(n)=INT(RND*26)+65
BACK 920·z=0
GAFG 930·z=z+1:IF·z=n·THEN·960
FAOP 940·IF·a(z)=a(n)·THEN·910
CADL 950·GOTO·930
BAOP 960·NEXT
BCBP 970·LOCATE·12,3:PRINT"Press·"+CHR$(a(1))+",·"+CHR$(a(2))+",·"+CHR$(a(3))+"·and·"+CHR$(a(4))+"·in·this·order·as·quickly·as·you·can."
IBAF 980·LOCATE·14,5:PRINT"The·test·lasts·twenty·seconds.·Press·[COPY]·to·begin."
GAHH 990·WHILE·INKEY(9)<>0:WEND
KAKK 1000·LOCATE·25,12:PRINT"Repetitions·:"
HAFK 1010·LOCATE·32,15:PRINT"Time·:"
FAEM 1020·rep=0:k=1:t=TIME
HAPB 1030·LOCATE·38,12:PRINT·rep;
GALI 1040·tim=INT((TIME-t)/300)
HAHC 1050·LOCATE·38,15:PRINT·tim;
FAKL 1060·IF·tim>19·THEN·1110
HABH 1070·a$=INKEY$:IF·a$=""·THEN·1040
EABD 1080·a$=UPPER$(a$)
BBEE 1090·IF·ASC(a$)=a(k)·THEN·k=k+1:IF·k=5·THEN·k=1:rep=rep+1:GOTO·1030
DAAA 1100·GOTO·1040
ABEK 1110·LOCATE·25,20:PRINT"Press·[COPY]·to·return·to·menu."
IANF 1120·IF·f$="L"·THEN·seqlef=rep
IAPG 1130·IF·f$="R"·THEN·seqrig=rep
IADG 1140·IF·f$="B"·THEN·seqbot=rep
GAMJ 1150·WHILE·INKEY(9)<>0:WEND
DABM 1160·CLS:GOTO·40
DENG 1170·LOCATE·1,21:PRINT"·········You·will·see·a·question·of·the·form·"+CHR$(34)+"How·many·******·are·there?"+CHR$(34)+"·which·refers·to·boxes·("+CHR$(233)+"),·circles·("+CHR$(230)+"),·lines·("+CHR$(204)+"),·or·shapes·(all·of·these)·elsewhere";
LDKA 1180·PRINT"on·the·screen.·When·the·screen·clears·after·a·split·second·you·must·type·in·the·answer.·There·are·twenty·questions·which·increase·in·speed.·[COPY]·to·begin.";
GAAK 1190·WHILE·INKEY(9)<>0:WEND
DAGA 1200·corr=0
EAIB 1210·FOR·z=1·TO·20
BAHM 1220·CLS
DADP 1230·RESTORE·1710
FALF 1240·typ=INT(RND*4)+1
IAPH 1250·FOR·n=1·TO·typ:READ·a$:NEXT
FAPJ 1260·IF·typ<4·THEN·1370
FACF 1270·num=INT(RND*5)+1
IAHI 1280·d=INT(RND*76)+1:e=INT(RND*24)+1
FACA 1290·FOR·n=1·TO·num
EAFM 1300·ch=INT(RND*3)+1
FAJN 1310·IF·ch=1·THEN·ch=230
FAON 1320·IF·ch=2·THEN·ch=233
FAPN 1330·IF·ch=3·THEN·ch=205
IALO 1340·LOCATE·d+n-1,e:PRINT·CHR$(ch);
CAIC 1350·NEXT
DAOA 1360·GOTO·1550
FABF 1370·num=INT(RND*3)+1
IAII 1380·d=INT(RND*76)+1:e=INT(RND*24)+1
GAGH 1390·IF·typ=1·THEN·ch=233
GAMG 1400·IF·typ=2·THEN·ch=230
GAAH 1410·IF·typ=3·THEN·ch=205
EANP 1420·FOR·n=1·TO·num
IALO 1430·LOCATE·d+n-1,e:PRINT·CHR$(ch);
CAIC 1440·NEXT
```



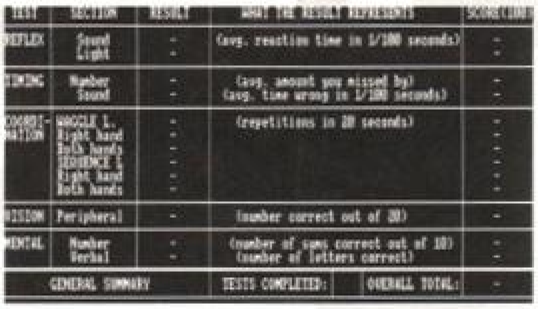
Let's try a test. On the count of three, I want everyone to yell "Boo". One, two, three...

```
FAAG 1450·FOR·n=1·TO·3-num
EANP 1460·ch2=INT(RND*2)+1
FAEK 1470·IF·typ>1·THEN·1490
JALB 1480·IF·ch2=1·THEN·ch=230·ELSE·ch=205
FAMN 1490·IF·typ<>2·THEN·1510
JAHB 1500·IF·ch2=1·THEN·ch=233·ELSE·ch=205
FAKJ 1510·IF·typ<3·THEN·1530
JAHB 1520·IF·ch2=1·THEN·ch=230·ELSE·ch=233
KAHG 1530·LOCATE·d+num+n-1,e:PRINT·CHR$(ch);
CAJC 1540·NEXT
EALJ 1550·f=INT(RND*52)+1
IAJM 1560·g=INT(RND*24)+1:IF·g=e·THEN·1560
OAFB 1570·LOCATE·f,g:PRINT"How·many·"+a$+"·are·there?";
KAEF 1580·t=TIME:WHILE·(TIME-t)<(150-(z*6)):WEND
BABN 1590·CLS
IADO 1600·LOCATE·32,12:PRINT"Answer·:·";
HAEH 1610·a$=INKEY$:IF·a$=""·THEN·1610
MAKG 1620·IF·VAL(a$)>0·THEN·PRINT·a$;:n=VAL(a$)·ELSE·1610
DAML 1630·LOCATE·36,14
CBPC 1640·IF·n=num·THEN·PRINT"CORRECT!":corr=corr+1·ELSE·PRINT"WRONG!"
FABP 1650·FOR·n=1·TO·1500:NEXT
CAMC 1660·NEXT
FBPI 1670·LOCATE·22,20:PRINT"You·got";corr;"right·out·of·20.·That's";corr*5;"%";
ABOO 1680·LOCATE·25,23:PRINT"Press·[COPY]·to·return·to·menu.";
GAFK 1690·WHILE·INKEY(9)<>0:WEND
DABM 1700·CLS:GOTO·40
LAMM 1710·DATA·Boxes,Circles,Lines,Shapes
CBIO 1720·LOCATE·23,21:PRINT"Test·(N)umerical·or·(V)erbal·ability?·";
MAPC 1730·b$=INKEY$:IF·b$=""·THEN·1730·ELSE·b$=UPPER$(b$)
JAKB 1740·IF·b$="N"·THEN·PRINT"N";:GOTO·1760
LAFF 1750·IF·b$="V"·THEN·PRINT"V";:GOTO·2200·ELSE·1730
EDEF 1760·LOCATE·1,23:PRINT"·········You·have·five·seconds·to·type·in·the·answer·to·each·of·ten·sums·which··get·progressively·more·difficult.·Press·[COPY]·to·begin."
GAEK 1770·WHILE·INKEY(9)<>0:WEND
DAGP 1780·corsum=0
EAEC 1790·FOR·z=1·TO·10
BALM 1800·CLS
JAMO 1810·CLEAR·INPUT:count=0:a=0:b=0:c=0
HACL 1820·LOCATE·34,17:PRINT"Time·:"
IAFK 1830·first=INT(RND*z*20)+((z-1)*5)
IAKP 1840·second=INT(RND*z*20)+((z-1)*5)
HAMD 1850·ans=first+second
MACC 1860·LOCATE·32,12:PRINT·first;"+";second;"=";
CAAN 1870·t=TIME
HALN 1880·GOSUB·2160:IF·a=1000·THEN·2080
HAHI 1890·a$=INKEY$:IF·a$=""·THEN·1880
IAGI 1900·IF·VAL(a$)=0·AND·a$<>"0"·THEN·1890
GABG 1910·LOCATE·44,12:PRINT·a$;
IAOA 1920·IF·ans>99·THEN·a=VAL(a$)*100
KAIM 1930·IF·ans<100·AND·ans>9·THEN·a=VAL(a$)*10
LACL 1940·IF·ans<10·THEN·a=VAL(a$):b=0:c=0:GOTO·2080
HAJN 1950·GOSUB·2160:IF·a=1000·THEN·2080
HAFI 1960·b$=INKEY$:IF·b$=""·THEN·1950
MABG 1970·IF·VAL(b$)=0·AND·b$<>"0"·AND·ASC(b$)<>127·THEN·1950
OAHD 1980·IF·ASC(b$)=127·THEN·a=0:LOCATE·44,12:PRINT"·";:GOTO·1890
GALG 1990·LOCATE·45,12:PRINT·b$;
HAGN 2000·IF·ans>99·THEN·b=VAL(b$)*10
NAMJ 2010·IF·ans<100·AND·ans>9·THEN·b=VAL(b$):c=0:GOTO·2080
HAOM 2020·GOSUB·2160:IF·a=1000·THEN·2080
HABH 2030·c$=INKEY$:IF·c$=""·THEN·2020
MAOE 2040·IF·VAL(c$)=0·AND·c$<>"0"·AND·ASC(c$)<>127·THEN·2020
OAMC 2050·IF·ASC(c$)=127·THEN·b=0:LOCATE·45,12:PRINT"·";:GOTO·1950
GACG 2060·LOCATE·46,12:PRINT·c$;
HAEF 2070·IF·ans>99·THEN·c=VAL(c$)
FACI 2080·PRINT:LOCATE·35,14
OBPE 2090·IF·a+b+c=ans·THEN·PRINT"CORRECT!":count=0:corsum=corsum+1·ELSE·IF·a<>1000·THEN·PRINT"WRONG!":count=0
FAIO 2100·FOR·n=1·TO·1500:NEXT
CADC 2110·NEXT
ABDP 2120·LOCATE·27,20:PRINT"You·got";corsum;"right·out·of·10."
LALB 2130·LOCATE·32,22:PRINT"[COPY]·for·menu."
GAMJ 2140·WHILE·INKEY(9)<>0:WEND
```

Line 1760

And now, folks, that old favourite, the PRINT command. Here it's being used in conjunction with LOCATE. "What," I can hear you thinking, "the hell is LOCATE?" Well, I'll tell you. When you issue a PRINT command, the CPC prints the text specified within quotation marks at the position of the text cursor on the screen. Fab, but what if you want to print something in a different location? You need to move the pointer. This is, funnily enough, exactly what the LOCATE command does. In this instance, the actual command issued was LOCATE 1,23 – locating the cursor 1 square across and 23 squares down from the top left corner of the screen.

```
DABM 2150·CLS:GOTO·40
HAOG 2160·count=INT((TIME-t)/300)
IAFA 2170·LOCATE·40,17:PRINT·count;
BBBG 2180·IF·count>4·THEN·LOCATE·35,14:PRINT"
     TOO·SLOW!":count=0:a=1000
CAMM 2190·RETURN
GDPF 2200·LOCATE·1,23:PRINT"·····You·have·fiv
     e·seconds·to·type·in·the·missing·letter·
     in·each·of·ten·anagrams(words·with·the·l
     etters·jumbled·up).·Press·[COPY]·to·begi
     n.";
GAKJ 2210·WHILE·INKEY(9)<>0:WEND
LAOI 2220·CLEAR·INPUT:ERASE·b:DIM·b(12):coran
     a=0
JAOA 2230·FOR·z=1·TO·10:count=0:a=0:CLS
DAJP 2240·RESTORE·2560
IAEL 2250·FOR·w=1·TO·(z-1)*5:READ·a$:NEXT
KAIA 2260·FOR·w=1·TO·INT(RND*5)+1:READ·a$:NEX
     T
FAPG 2270·x=INT(RND*(z+3))+1
EAEI 2280·b$=MID$(a$,x,1)
BAFP 2290·c$=""
EACI 2300·FOR·n=1·TO·z+2
FALG 2310·y=INT(RND*(z+3))+1
EAJP 2320·IF·y=x·THEN·2310
BAIL 2330·c=0
GAEO 2340·c=c+1:IF·c=z+3·THEN·2370
FAKJ 2350·IF·b(c)=y·THEN·2310
DANA 2360·GOTO·2340
HAJE 2370·b(n)=y:c$=c$+MID$(a$,y,1)
CAKL 2380·NEXT·n
IAJD 2390·LOCATE·5,5:PRINT"Word·is:"
BBMA 2400·LOCATE·5,8:PRINT"Anagram·is··(one·l
     etter·missing)·:"
HAJO 2410·LOCATE·34,17:PRINT"Time·:";
FAGP 2420·LOCATE·45,5:PRINT·a$
FAMP 2430·LOCATE·45,8:PRINT·c$
MAEA 2440·LOCATE·32,11:PRINT"Missing·letter·?
     ·";
CALM 2450·t=TIME
KAHH 2460·d$=INKEY$:GOSUB·2160:IF·a=1000·THEN
     ·2510
EAAO 2470·IF·d$=""·THEN·2460
MADM 2480·count=0:d$=UPPER$(d$):LOCATE·49,11:
     PRINT·d$;
DAAM 2490·LOCATE·35,14
CBHP 2500·IF·d$=b$·THEN·PRINT"CORRECT!":coran
     a=corana+1·ELSE·PRINT"WRONG!"
FAEO 2510·FOR·e=1·TO·1500:NEXT
FAJH 2520·CLEAR·INPUT:NEXT
IBNH 2530·LOCATE·17,21:PRINT"You·got";corana;
     "right·out·of·10.·Press·[COPY]·for·menu.
     "
GAAK 2540·WHILE·INKEY(9)<>0:WEND
DAFM 2550·CLS:GOTO·40
IAFH 2560·DATA·DISC,CARD,BOOK,FILE,LEAD
KAMC 2570·DATA·MOUSE,PAPER,POWER,CABLE,RADIO
LAMP 2580·DATA·COLOUR,MEMORY,ORIGIN,SYMBOL,WI
     NDOW
NAEA 2590·DATA·CONTROL,AMSTRAD,CHANNEL,COMMAN
     D,MESSAGE
OAOJ 2600·DATA·LANGUAGE,CASSETTE,KEYBOARD,SOF
     TWARE,JOYSTICK
ABJC 2610·DATA·EXPANSION,REMAINDER,VARIABLES,
     PROCESSOR,OPERATION
BBDL 2620·DATA·BRIGHTNESS,RENDEZVOUS,ARITHMET
     IC,PROTECTION,CHARACTERS
DBHB 2630·DATA·INFORMATION,PERIPHERALS,HEXADE
     CIMAL,EXPONENTIAL,SYNTHESISER
EBFJ 2640·DATA·ORGANISATION,MATHEMATICAL,INTE
     RRUPTION,SYNCHRONISED,INTERMEDIATE
GBNB 2650·DATA·INTERROGATION,CONFIGURATION,CO
     MMUNICATION,UNDERSTANDING,CORRESPONDING
BBAJ 2660·LOCATE·25,21:PRINT"Test·timing·to·(
     L)ight·or·(S)ound?·";
MAHD 2670·b$=INKEY$:IF·b$=""·THEN·2670·ELSE·b
     $=UPPER$(b$)
JAFB 2680·IF·b$="L"·THEN·PRINT"L";:GOTO·2700
LAGG 2690·IF·b$="S"·THEN·PRINT"S";:GOTO·2890·
     ELSE·2670
MDAG 2700·LOCATE·1,23:PRINT"········Press·the
     ·[SPACE·BAR]·while·the·constantly·changi
     ng·number·matches·the··required·number.·
     There·are·ten·of·these·which·get·faster.
     ·Press·[COPY]·to·begin.";
GAPJ 2710·WHILE·INKEY(9)<>0:WEND
DAEB 2720·miss=0
EAPB 2730·FOR·z=1·TO·10
HAOK 2740·req=INT(RND*(100+(z*10)))+40
OAMH 2750·CLS:LOCATE·30,9:PRINT"Required·numb
     er·:";req
BAKM 2760·n=0
CAFG 2770·n=n+1
GAHB 2780·LOCATE·37,12:PRINT·n
```



This is where all the action isn't.

```
GAFI 2790·IF·INKEY(47)=0·THEN·2820
GAKP 2800·FOR·a%=1·TO·(10-z)*6:NEXT
DAEB 2810·GOTO·2770
BCKI 2820·IF·n=req·THEN·LOCATE·32,16:PRINT"YO
     U·GOT·IT·RIGHT!"·ELSE·LOCATE·34,16:PRINT
     "MISSED·BY";ABS(n-req):miss=miss+ABS(n-r
     eq)
FAFO 2830·FOR·a=1·TO·1500:NEXT
CANC 2840·NEXT
DCNG 2850·IF·miss=0·THEN·LOCATE·30,20:PRINT"Y
     ou·hit·every·number."·ELSE·LOCATE·27,20:
     PRINT"On·average·you·missed·by";miss/10
NAJF 2860·LOCATE·29,23:PRINT"Press·[COPY]·for
     ·menu."
GAGK 2870·WHILE·INKEY(9)<>0:WEND
DALM 2880·CLS:GOTO·40
IDNE 2890·LOCATE·1,23:PRINT"······You·will·he
     ar·three·short·beeps·at·equal·intervals.
     ·Press·the·[SPACE·BAR]·when·you·think·th
     ere·should·be·a·fourth·beep.·Press·[COPY
     ]·to·begin.";
GAAK 2900·WHILE·INKEY(9)<>0:WEND
EABL 2910·missbeep=0
FAKC 2920·FOR·z=1·TO·10:c=0
LBIM 2930·CLS:LOCATE·10,10:PRINT"Press·the·[S
     PACE·BAR]·when·you·would·expect·the·four
     th·beep."
FALK 2940·gap=INT(RND*75)+15
CAAN 2950·t=TIME
GAPE 2960·AFTER·gap·GOSUB·2990
NAJO 2970·IF·INKEY(47)=0·THEN·u=TIME:SOUND·7,
     100,10,15:GOTO·3030
DAOB 2980·GOTO·2970
GAEE 2990·c=c+1:IF·c=4·THEN·3020
GABE 3000·AFTER·gap·GOSUB·2990
EAAK 3010·SOUND·7,100,10,15
CAFM 3020·RETURN
GALG 3030·tim=ROUND((u-t)/3,0)
HAIF 3040·misb=ABS((8*gap)-tim)
JALK 3050·missbeep=missbeep+misb
FBGC 3060·LOCATE·20,15:PRINT"You·were";misb;"
     hundredths·of·a·second·out."
FAPO 3070·FOR·n=1·TO·1500:NEXT
CAKC 3080·NEXT
LBOF 3090·LOCATE·15,20:PRINT"On·average·you·w
     ere";missbeep/10;"hundredths·of·a·second
     ·out."
NANE 3100·LOCATE·29,23:PRINT"Press·[COPY]·for
     ·menu."
GAKJ 3110·WHILE·INKEY(9)<>0:WEND
DAPL 3120·CLS:GOTO·40
ODLF 3130·LOCATE·1,21:PRINT"·WARNING:··This·p
     rogram·is·supposed·to·be·fun·as·well·as·
     useful.·Please·don't·bedisheartened·if·y
     our·results·could·be·better.·Tiredness,·
     alcohol·and·other·such";
NBMO 3140·PRINT"factors·will·affect·your·perf
     ormance·and·you·will·improve·with·practi
     ce."
OBBN 3150·LOCATE·7,25:PRINT"Press·[COPY]·to·s
     ee·your·results·and·then·[COPY]·to·retur
     n·to·the·menu.";
GAPJ 3160·WHILE·INKEY(9)<>0:WEND
KACJ 3170·CLS:d=0:tes=0:chklo=100:chkhi=0
HBJO 3180·LOCATE·1,1:PRINT"·TEST·····SECTION·
     ····RESULT········WHAT·THE·RESULT·REPRES
     ENTS········SCORE(100)";
DAIP 3190·RESTORE·3310
DACO 3200·FOR·n=1·TO·7
IAKD 3210·READ·a:MOVE·0,a,1:DRAW·640,a,1
CAGC 3220·NEXT
DACO 3230·FOR·n=1·TO·4
HANL 3240·READ·a:MOVE·a,400:DRAW·a,88
CAJC 3250·NEXT
FACM 3260·MOVE·0,56:DRAW·640,56
GAKD 3270·MOVE·248,88:DRAW·248,56
GABD 3280·MOVE·432,88:DRAW·432,56
GAMD 3290·MOVE·554,88:DRAW·554,56
GAMD 3300·MOVE·396,88:DRAW·396,56
HACB 3310·DATA·376,328,280,168,136,90,88
EAEO 3320·DATA·56,160,248,554
FAOH 3330·RESTORE·4840:a$="A"
DAGM 3340·WHILE·a$<>""
DAHM 3350·READ·a$,a,b
GAKF 3360·LOCATE·a,b:PRINT·a$;
CALB 3370·WEND
IACD 3380·a=souref*5:b=3:GOSUB·4810
EAJK 3390·IF·d=1·THEN·3430
EAIB 3400·tes=tes+1
IABD 3410·a=souref*5:b=3:GOSUB·4770
MALJ 3420·b$="reflexes·to·sound·are":GOSUB·46
     50
IAEB 3430·a=ligref*5:b=4:GOSUB·4810
EAKK 3440·IF·d=1·THEN·3480
EANB 3450·tes=tes+1
IAMB 3460·a=ligref*5:b=4:GOSUB·4770
MAPI 3470·b$="reflexes·to·light·are":GOSUB·46
     50
HAPI 3480·a=miss/10:b=6:GOSUB·4810
EANK 3490·IF·d=1·THEN·3550
EAJB 3500·tes=tes+1
IAJF 3510·c(tes)=100-(miss/100-0.02)*100
DAJF 3520·GOSUB·4740
JAHO 3530·LOCATE·74,6:PRINT·ROUND(c(tes),0);
KAEN 3540·b$="visual·timing·is":GOSUB·4650
JAKC 3550·a=missbeep/10:b=7:GOSUB·4810
EAJK 3560·IF·d=1·THEN·3620
EAAC 3570·tes=tes+1
JAOJ 3580·c(tes)=100-(missbeep/100-0.3)*20
DAAG 3590·GOSUB·4740
JAGO 3600·LOCATE·74,7:PRINT·ROUND(c(tes),0);
LAKG 3610·b$="timing·to·sound·is":GOSUB·4650
```

Lines 3260-3300

These are the line-drawing commands. The CPC graphics screen is measured as 640 units across (x axis), and 400 units high (y axis). Both axis start in the bottom-left corner of the screen. Your graphics pen also starts there, at location 0,0. The pen is moved to a location by using the MOVE command in the following fashion:

```
MOVE x axis,y axis
```

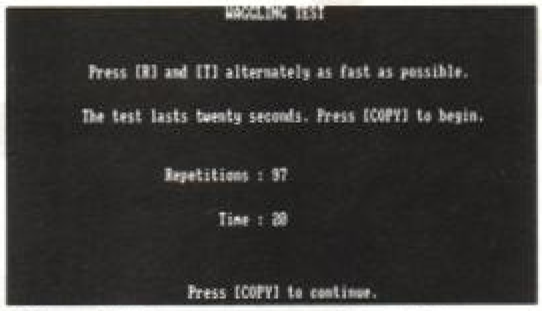
And you can draw a line from the pen's location to a new location with the folowing command:

```
DRAW x axis,y axis
```

Something you should know if you're new to AA listings...

But we're not going to let on here. You're going to have to turn to page 18. And if you're a listings novice we strongly advise you *do* check out page 18 before you start typing this mammoth baby in, or it'll all end tears.

```
HAAM 3620·a=replef:b=9:GOSUB·4810
EAMK 3630·IF·d=1·THEN·3670
IAFB 3640·a=jylef:b=replef:i=9
DAAG 3650·GOSUB·4680
NANM 3660·b$="left·hand·finger·speed·is":GOSUB·4650
HAIP 3670·a=reprig:b=10:GOSUB·4810
EANK 3680·IF·d=1·THEN·3720
IAIF 3690·a=jyrig:b=reprig:i=10
DAMF 3700·GOSUB·4680
OAMD 3710·b$="right·hand·finger·speed·is":GOSUB·4650
HAIP 3720·a=repbot:b=11:GOSUB·4810
EAOK 3730·IF·d=1·THEN·3770
GADG 3740·a=0:b=repbot:i=11
DABG 3750·GOSUB·4680
ABJI 3760·b$="finger·speed·using·both·hands·is":GOSUB·4650
HACP 3770·a=seqlef:b=12:GOSUB·4810
EAAL 3780·IF·d=1·THEN·3830
KAKL 3790·tes=tes+1:c(tes)=(seqlef+10)*2.8
DAKF 3800·GOSUB·4740
KAFB 3810·LOCATE·74,12:PRINT·ROUND(c(tes),0);
OAIC 3820·b$="left·hand·coordination·is":GOSUB·4650
HALP 3830·a=seqrig:b=13:GOSUB·4810
EADL 3840·IF·d=1·THEN·3890
KACM 3850·tes=tes+1:c(tes)=(seqrig+10)*2.8
DAAG 3860·GOSUB·4740
KAMB 3870·LOCATE·74,13:PRINT·ROUND(c(tes),0);
OABK 3880·b$="right·hand·coordination·is":GOSUB·4650
IAFA 3890·a=seqbot:b=14:GOSUB·4810
EANK 3900·IF·d=1·THEN·3950
KACM 3910·tes=tes+1:c(tes)=(seqbot+10)*2.8
DANF 3920·GOSUB·4740
KAKB 3930·LOCATE·74,14:PRINT·ROUND(c(tes),0);
ABGO 3940·b$="coordination·using·both·hands·is":GOSUB·4650
HAMC 3950·a=corr:b=16:GOSUB·4810
EAGK 3960·IF·d=1·THEN·4000
IAAL 3970·tes=tes+1:c(tes)=corr*5
HAMO 3980·LOCATE·74,16:PRINT·c(tes);
MAFI 3990·b$="peripheral·vision·is":GOSUB·4650
IAEA 4000·a=corsum:b=18:GOSUB·4810
EAOJ 4010·IF·d=1·THEN·4050
JACL 4020·tes=tes+1:c(tes)=corsum*10
HABO 4030·LOCATE·74,18:PRINT·c(tes);
MAPF 4040·b$="mental·arithmetic·is":GOSUB·4650
HAFO 4050·a=corana:b=19:GOSUB·4810
EAPJ 4060·IF·d=1·THEN·4100
JACJ 4070·tes=tes+1:c(tes)=corana*10
HAHO 4080·LOCATE·74,19:PRINT·c(tes);
LADC 4090·b$="verbal·ability·is":GOSUB·4650
FAEL 4100·LOCATE·73,21:tot=0
JAIJ 4110·IF·tes=0·THEN·PRINT"·--";:GOTO·4290
EAJP 4120·FOR·n=1·TO·tes
FAAC 4130·tot=tot+c(n)
CAIC 4140·NEXT
GAFB 4150·score=tot/tes
HAGC 4160·PRINT·ROUND(score,2);
PAPH 4170·LOCATE·51,21:IF·tes=13·THEN·PRINT"ALL":·ELSE·PRINT·tes;
EADA 4180·RESTORE·4590
GANI 4190·FOR·n=1·TO·score\10
CAHK 4200·READ·a$
CAGC 4210·NEXT
CAJK 4220·READ·a$
DAKP 4230·RESTORE·4630
JAPP 4240·FOR·n=1·TO·INT(RND*3)+1:READ·c$:NEXT
DANP 4250·RESTORE·4640
KACA 4260·FOR·n=1·TO·INT(RND*3)+1:READ·d$:NEXT
PAHD 4270·LOCATE·1,23:PRINT"You·are·a";a$;"·games-player.";
BBIO 4280·IF·tes>1·THEN·PRINT"·Your·";hi$;"·";c$;"·but·your·";lo$;"·";d$;
FAJM 4290·IF·tes<13·THEN·4570
DAJN 4300·numgam=0
KAMD 4310·IF·c(1)>69·AND·c(2)>69·THEN·4320·ELSE·4350
KACE 4320·IF·c(3)>69·AND·c(4)>69·THEN·4330·ELSE·4350
HALM 4330·IF·c(11)>69·THEN·4340·ELSE·4350
PAOF 4340·numgam=numgam+1:j$(numgam)="shoot-em-ups"
KAKB 4350·IF·c(3)>69·OR·c(4)>69·THEN·4360·ELSE·4390
NANC 4360·IF·c(8)>69·AND·c(9)>69·AND·c(10)>69·THEN·4370·ELSE·4390
MALJ 4370·IF·c(5)>69·OR·c(6)>69·OR·c(7)>69·THEN·4380·ELSE·4390
BBCA 4380·numgam=numgam+1:j$(numgam)="collecting·games"
KAFB 4390·IF·c(3)>69·OR·c(4)>69·THEN·4400·ELSE·4440
MALI 4400·IF·c(5)>69·OR·c(6)>69·OR·c(7)>69·THEN·4410·ELSE·4440
MANL 4410·IF·c(8)>69·OR·c(9)>69·OR·c(10)>69·THEN·4420·ELSE·4440
KACH 4420·IF·c(12)>69·OR·c(13)>69·THEN·4430·ELSE·4440
PAEI 4430·numgam=numgam+1:j$(numgam)="puzzle·games"
KAJE 4440·IF·c(1)>69·AND·c(2)>69·THEN·4450·ELSE·4490
MAOP 4450·IF·c(5)>69·AND·c(6)>69·AND·c(7)>69·THEN·4460·ELSE·4490
NAAD 4460·IF·c(8)>69·AND·c(9)>69·AND·c(10)>69
```



Alternatively, you can press Z and X alternately, but you won't score much.

```
·THEN·4470·ELSE·4490
HAKN 4470·IF·c(11)>69·THEN·4480·ELSE·4490
PAFA 4480·numgam=numgam+1:j$(numgam)="simulators"
KAHK 4490·IF·c(12)>69·AND·c(13)>69·THEN·4500·ELSE·4510
ABIB 4500·numgam=numgam+1:j$(numgam)="cerebral·games"
GAKM 4510·IF·numgam=0·THEN·4570
LAAD 4520·PRINT"·You·would·excel·at·";j$(1);
GAGJ 4530·FOR·n=2·TO·numgam-1
EANM 4540·PRINT",·";j$(n);
CANC 4550·NEXT
BBPG 4560·IF·numgam>1·THEN·PRINT"·and·";j$(numgam);".";·ELSE·PRINT".";
GAFK 4570·WHILE·INKEY(9)<>0:WEND
DAKM 4580·CLS:GOTO·40
CBGE 4590·DATA·"n·inexperienced","n·irregular","n·occasional"
PACF 4600·DATA·"·moderate","·respectable","·competent"
NAFE 4610·DATA·"·good","n·excellent","·brilliant"
KAMN 4620·DATA·"n·incredible","·cheating"
FBOB 4630·DATA·"particularly·good","your·best·element","impressive"
HBGN 4640·DATA·"a·little·weak.","in·need·of·improvement.","not·quite·as·sharp."
NAII 4650·IF·c(tes)>chkhi·THEN·chkhi=c(tes):hi$=b$
BBGC 4660·IF·c(tes)>0·AND·c(tes)<chklo·THEN·chklo=c(tes):lo$=b$
CABN 4670·RETURN
EADC 4680·tes=tes+1
JANJ 4690·IF·a=1·THEN·c(tes)=b*0.6:GOTO·4720
FAIC 4700·c(tes)=(b+30)*0.7
DALF 4710·GOSUB·4740
KAMB 4720·LOCATE·74,i:PRINT·ROUND(c(tes),0);
CAOM 4730·RETURN
HAIO 4740·IF·c(tes)<0·THEN·c(tes)=2
IALK 4750·IF·c(tes)>100·THEN·c(tes)=100
CABN 4760·RETURN
HABB 4770·c(tes)=100-(a/100-0.06)*160
DACG 4780·GOSUB·4740
KAMB 4790·LOCATE·74,b:PRINT·ROUND(c(tes),0);
CAMM 4800·RETURN
BBBJ 4810·IF·a=0·THEN·LOCATE·26,b:PRINT"-":LOCATE·75,b:PRINT"-":d=1:GOTO·4830
JACE 4820·d=0:LOCATE·23,b:PRINT·ROUND(a,1)
CAPM 4830·RETURN
KACO 4840·DATA·REFLEX,1,3,Sound,12,3,Light,12,4
LAOF 4850·DATA·TIMING,1,6,Number,11,6,Sound,12,7
LAFE 4860·DATA·COORDI-,1,9,NATION,1,10,"WAGGLE·L.",9,9
PALN 4870·DATA·Right·hand,9,10,Both·hands,9,11,"SEQUENCE·L",9,12
OANK 4880·DATA·Right·hand,9,13,Both·hands,9,14,VISION,1,16
NAKM 4890·DATA·Peripheral,9,16,MENTAL,1,18,Number,11,18
DBAC 4900·DATA·Verbal,11,19,"(avg.·reaction·time·in·1/100·seconds)",33,3
JBHE 4910·DATA·"(avg.·amount·you·missed·by)",36,6,"(avg.·time·wrong·in·1/100·seconds)",34,7
MACP 4920·DATA·"(repetitions·in·20·seconds)",36,9
MABH 4930·DATA·"(number·correct·out·of·20)",36,16
KBOO 4940·DATA·"(number·of·sums·correct·out·of·10)",35,18,"(number·of·letters·correct)",36,19
EBOH 4950·DATA·"GENERAL·SUMMARY",8,21,"OVERALL·TOTAL:",56,21,"TESTS·COMPLETED:",34,21,"",1,1
JAJP 4960·LOCATE·32,21:INPUT"Filename:·",a$
DADM 4970·OPENOUT·a$
KCDJ 4980·PRINT#9,souref;ligref;miss;missbeep;replef;jylef;reprig;jyrig;repbot;seqlef;seqrig;seqbot;corr;corsum;corana
DAEG 4990·CLOSEOUT
DAOL 5000·CLS:GOTO·40
JAMO 5010·LOCATE·32,21:INPUT"Filename:·",a$
DAFF 5020·OPENIN·a$
JCHN 5030·INPUT·#9,souref,ligref,miss,missbeep,replef,jylef,reprig,jyrig,repbot,seqlef,seqrig,seqbot,corr,corsum,corana
CAGP 5040·CLOSEIN
DADM 5050·CLS:GOTO·40
```

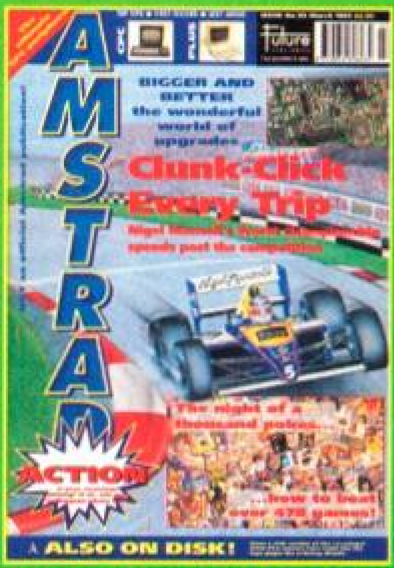
'Til next month, keep programming, and try and learn from what you've just been taught – experiment. You can't damage your computer in any way by typing any of the commands you've just been shown.

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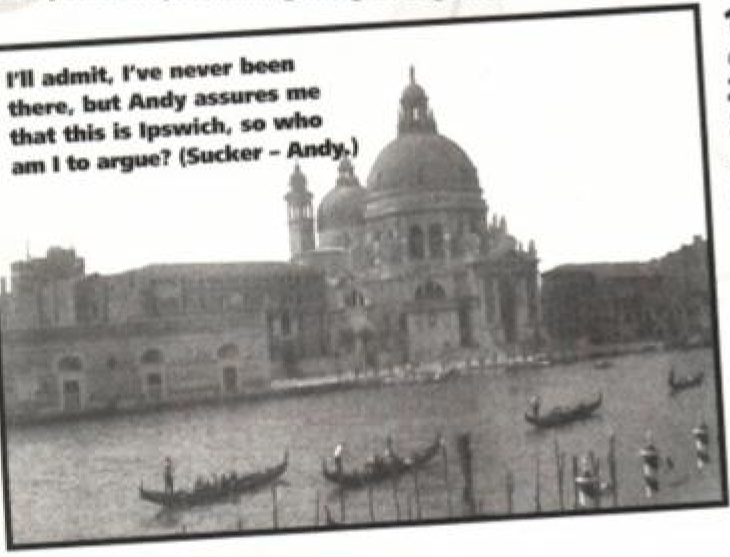
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Reaction

Send your letters to: Reaction, Amstrad Action, 30 Monmouth Street, Bath BA1 2BW

No mo' blues

First, may we come to the point that we love AA, it is the best computer mag around. Now we have some questions to ask you.
1 Why did the mysterious Ayresman person (*AA*95) invent that weird song called Blues? We suggest that he comes back with a better and funnier song.
2 Why does Tim hate Seymour?
3 Could we have a *European Super League* or *WEC Le Mans* on the covertape soon?
4 If you have problems getting CPC games why not come to attractive, sunny Ipswich (complete with football team). There are loads of CPC suppliers here – Toys'R'Us, Menzies, Bits'n'Bytes and a new shop called Computer World. So come down to our lovely town (Oops, sorry, this wasn't supposed to sound like a TV commercial).
5 Could you tell us where can we get *Dizzy Down The Rapids*?
6 Oh and we almost forgot, could someone please give us a cheat for *Magicland Dizzy*?
The CPC guys, Ipswich.


I'll admit, I've never been there, but Andy assures me that this is Ipswich, so who am I to argue? (Sucker – Andy.)

1 Please no! Not another one! We couldn't handle another one!
2 Because it's so easy.
3 We could. Whether we will is another matter entirely.
4 At last, a reason for actually wanting to go to Ipswich...
5 Try Snowdonia. There are some great stretches of white water up there.
6 Probably. **Dave**

Robot Reply

I am delighted to let you know that I have at last heard from Robot PD. The disks which I thought had been lost have arrived back home with *PowerPage1 128* and other programs safely loaded. They also returned my cheques.

What with redesigning computer programs, writing for *AA* and answering many various technical problems, reorganising, improving and enlarging his library and also reading for a degree I think Richard should be congratulated on his industry and integrity. Needless to say I will be taking advantage of his extensive library as time goes by.

Look after him, *AA*, you've got a good man there. Well done, Robot PD.
Bill Wilson, Peterborough.

Hang on while I just check the post code on this one. Nope, it does say Peterborough, so it can't be Richard writing under a pseudonym. Is he paying you or something, Bill? Seriously, we reckon that Richard does a darned fine job. Some people have been experiencing a few problems with Robot PD recently, but there is a reason for this, one that we've mentioned a few times already in *AA*; the library is temporarily closed, so don't send off any orders until further notice. If you have sent an order off recently, just be patient; Richard will sort everything out eventually.

Kooky kompilation kwestions

About one month ago I bought eight games for 50p at my local computer store (*certainly sounds like a bargain too good to be missed – Dave*).
1 They are on two cassettes, neither of which came with instructions. On one cassette the games are *ATV simulator*, *MiG29*, *Grand Prix* and *BMX Simulator* and on the other cassette are *Rugby*, *Tennis*, *Fruit Machine Simulator* and *Pinball Simulator*. Both cassettes are made by CodeMasters. Could you please tell me what the titles of the cassettes are?
2 Because the games did not come with instructions I am unable to play the tennis games. Will you please send me the code sheet?
3 Will *AA* please print a map for the *Addams Family*?
4 When *Terminator 2*, *Final Fight* and the *Addams Family* were released they were 128K games. But when released on budget they became 64K games. How did this happen?
5 Finally, I would like to say what a great idea the Classic Collection covertape is. A brilliant covertape to go with a fabulous magazine. *Amstrad Action* is miles better than any other computer magazine currently on the market.
Mark Reed, Carlisle.

1 We reckon they must be *Quattro* something or other collections, but we're not sure which. *Quattro Driving Sims* and *Quattro Uncategorisable Sims* perhaps?
2 'Fraid there's no code sheet here at the *AA* office, but if anyone out there has a spare one or one they could photocopy, send it in to *AA* and we'll pass it on.
3 Sure can, and no sooner said than done. There it is at the bottom of the page.
4 They were converted to 64K games so that more people could play them. When this happens (it's not rare y'know) something usually has be to be forfeited – some of the music, a couple of intro screens, that sort of thing.
5 Oh, gee, thanks, Mark. What can we say? Pibble, perhaps? Well, I suppose we could, but there's not much point, so we won't. Or, then again, maybe we will. Pibble. **Dave**



PS Of The Month

Neil Anderson, Scotland.
PS My uncle and aunt know the chappie who owns Future Publishing.

Oooh, we're trembling. That really made us print the rest of your letter, didn't it?

If you do feel you have a real grievance, write him a short, polite letter clearly the details. **Dave**

Any ideas?

I would like to reply to Peter Hale's comments in July's Reaction about a fund being set up to help keep the CPC alive, the fund being used to pay programmers. Yes, the CPC does need top quality programmers to program the games but is it a lack of programmers that is halting the process of the CPC? I like to think that it is more a lack of decent ideas.

Besides, how would a fund be administered? I mean, who would decide how much money out of the fund should go to the programmer? And anyway, the programmer would get the majority of the royalties from any game they wrote if they had set up their own software company – in effect getting paid twice. And this is the way that I see the future of the CPC's main software market going.

My idea is that people should send their ideas for games to WACCI, the UAUG or even *AA* where the people with a good idea of the sort of game that people want can sort out the decent ideas and post them to the programmers. This way there would be good games for the CPC and the programmers would be making the money to keep themselves in business. This could also show the large companies who have pulled out of the CPC market just how much support the CPC has.
Mark Huttley, Herne Bay.

The one thing I'm not too sure about here is whether you reckon the people who supplied the ideas should be paid for their efforts as well. I think they should – intellectual rights and all that stuff. But if there are any programmers out there with writers' block who like the sound of this idea, let us know. **Dave**

Interesting

My main leisure interests are photography, cine-photography and model railways which your Reader Survey did not cover.
ME Goldring, Bursledon.

Er, no. Banged to rights there, guv. And we didn't mention cake-icing, river-widening, dressing up as Cybermen, crane-fly baiting, nuclear physics, McGann spotting, angling, stamp collecting, Marvel comics or reciting all the US Presidents while standing in a bucket of lime jelly. We must have excluded soooo many people. How thoughtless of us. **Dave**

Elitist behaviour

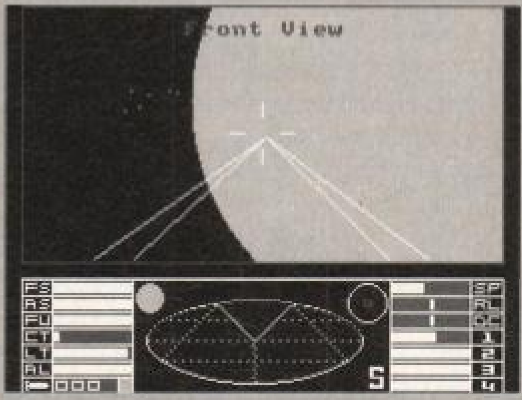
Hello! I just thought I'd say that because nobody else does. I have just two small points to make.

1 In one of your recent mags you gave tips for *Elite Gold*. I've never heard of a cloaking device before and the second mission your mag described was the same as the first mission on my version (by Firebird). Maybe it is simply that I have a different version of *Elite* – mine is on the *Supreme Challenge 464* tape compilation. Or maybe the instructions 'accidentally' omitted advice about the cloaking device.

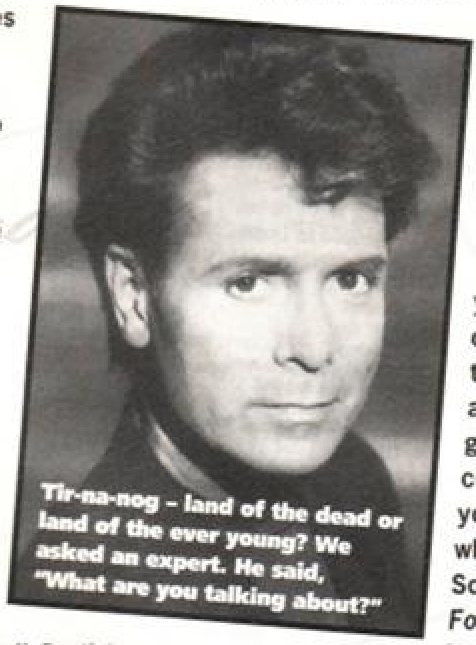
2 Your covertapes are too serious. Put £25 of games on them and you will have loads more readers. Otherwise the mag is the best.
Robert Clark, Andover.

1 Stand aside Dave, and let Simon *'Elite'* Forrester into the big Ed's chair for a minute. There are two versions – the *Gold Edition* and the *Metropolitan Edition*, both of which should have the cloaking device. When you get to the second mission, at some point you'll see a flashing ship (a Fer-De-Lance if my memory serves me correctly). Destroy it, and pick up the cargo (using your fuel scoop). You should now have a cloaking device that's activated by pressing Y (or CTRL and Y, or SHIFT and Y, or something – definitely a Y, though). If this doesn't cut the mustard, it has to be down to the actual version you've got, in which case sorry 'n all, but you'll need the *Metropolitan* edition.

2 I'm also the bloke who organises the covertapes, and I'd just like to say that I think you're wrong (oi, *this is my bit – Dave*). CPC owners today aren't only interested in games (*naff off back to Assembly Line – Dave*). They're interested in getting their CPCs to act like computers, not consoles (*Go away – Dave*). So the serious stuff is staying. But, there are some big things happening soon on the covertape which should please game fans. **Simon**



There are classic games and then there is Elite. (Hey, do you think I should be writing TV advertisements?) (No – Simon).



Tir-na-nog – land of the dead or land of the ever young? We asked an expert. He said, "What are you talking about?"

Dead or alive?

I was reading through a book by Rosemary Sutcliffe the other day and I noticed something in it which may interest you – it talked of a place called Tir-na-nog, land of the ever young. This is also the name of a game on one of your covertapes and nobody at your mag seemed to know what this word meant. Some prat on *Commodore Format* called Sean (probably the fool on the Big Breakfast with the huge nose) thought it meant 'Land of the Dead'.
Neil Gordge Crick, Northants.

I'm glad that's all been cleared up. But Sean isn't the one on *The Big Breakfast* with the big nose. That's Gabby. **Dave**

Get it on tape

At the moment there is a shortage of public domain cassette-based software for the CPC464. Most public domain libraries only deal with 3-inch disk public domain software so I am finding it increasingly difficult to get hold of cassette-based PD programs.

I will pay £5 to the person who submits the best PD program on cassette this month. Also anyone who sends me any PD programs will get their cassette sent back to them with all the return postage paid so it will only cost them the postage to send the software to me (*full address at the end of this letter – Dave*).

I enjoy collecting all sorts of PD software but unfortunately as I only have a cassette-based machine most PD libraries will not transfer 3-inch disk software to cassette as they say it takes too long to transfer the programs.

I am sure that quite a few of your other readers are experiencing the same problems with obtaining cassette-based public domain software as myself.

One library which specialises in cassette-based software is the Egerton Public Domain Library run by Barry Egerton up in Stafford which is committed to supplying CPC users with all the latest cassette-based software and is very helpful and friendly towards its customers.

I can thoroughly recommend this public domain library because Barry values his customers, speedily returns all orders



and is very helpful if you have any problems with any aspects of the CPC.

Richard Latham,
31 Oriel House
Blackcat Close,
Chelmsley Wood,
Birmingham B37 5DG

It would be interesting to hear from public domain libraries explaining exactly why they don't provide software on cassette. Sure, it takes longer to transfer programs on to cassette, but if the demand is there surely someone is ready to step in and supply the goods. Is the demand there? Write in and let us know. **Dave**

Is he serious?

What can I say? I just received my regular saved issue of *AA* from my local newsagents and I just have to put pen pen to paper (not strictly true, more fingers to keyboard) to sing a song of praise (*hang on, is this a CPC or bontempi keyboard we're talking about here? – Dave*).

Now, I've had the odd moan in the past seven years but now has to be the time to put things right. Your covertape containing *MasterCalc* and *Biff* was nothing short of magnificent. Who needs a 16-bit computer or a 32-bit console with game-play like that. Super humour! (*Wait a minute, is he taking the mick? – Dave*).

As for *MasterCalc* – just what I wanted. I've been trying to purchase this jobby for years with no luck and there it was supplied free of charge.

THANKS.

And I mean it (*he is definitely taking the mick – Dave*).

Now seeming as you can achieve the impossible (*oh I see, it was a buttering up exercise – Dave*) could you give me any clues on how I can obtain the following on tape or disk?

- ***Little Computer People***
- ***Roland In Time* (I am serious)**
- ***Purple Saturn Day***
- ***Goddess of Phobos* (sleazy adventure)**

Looking forward as always to the next issue... (*snip – Dave*).

Ray Hawkins, Bognor Regis

Sorry, but we had to stop that before it got even more like the sickeningly pukey bit in some US sit com. And we were running out of room, as well. Phew. **Dave**

Don't return to sender

I'm writing to tell you how rubbish your magazine is. This are for two main reasons.

1 You don't cover enough technical stuff, like accessing ports, hardware scrolls, writing demos, etc.

2 I had a covertape that didn't work, and when I sent it to you, you just sent it straight back, telling me to send it to some other company. If you supplied the covertape, you should fix it.

So, sorry, but I don't think I'll be re-subscribing to *AA*.

Janice Morgan



1 The reason we don't cover this stuff is because only about 500 of our readers would understand a word we're saying. We've probably got 500 trainspotters amongst our readers too – do you want to read a four-page feature on trainspotting? Okay, so we can't please all of the people all of the time, but if we started printing articles that only appealed to the minutest fraction of our readership, we'd lose all our readers, because every issue would end up with only a few pages that would appeal to each reader. We like to think we get the balance right, and the answers to we got to our Reader Survey back that up.

2 Every month, we tell you to send faulty covertapes to Ablex, who'll happily replace them (address on page five), and every month we receive a whole load of faulty covertapes here at the *AA* office. Now look, sorry, but we really can't deal with them here – we've got to concentrate on getting the magazine out. All we'll do is redirect them which means that it'll take you longer to recieve your new tape, there's twice the chance that it'll get lost in the post and even more chance that your address will get lost in the works somewhere. So for your own sakes as well as our sanity, send faulty tapes to Ablex. **Dave**

Chartwatch

The Top 10 most popular questions we get get asked by readers who call in (well, they're not very popular with Simon, to be honest):

1 When's *Street Fighter 2* coming out?
2 Why don't you like *Dizzy*?
3 Is *Street Fighter 2* going to be any good?
4 Can I run my business using *Mini Office 2*?
5 Will *Street Fighter 2* be out in time for Christmas (we presume they mean 1993)?
6 What games can I play with my light gun?
7 Why haven't US Gold released *Street Fighter 2* yet?
8 When are you going to do the project about putting a keyboard on the GX4000?
9 Will you be having *Street Fighter 2* on the AA covertape?
10 Why did you start screaming when you I mentioned *Street Fighter 2*?

Well and truly zapped

Your review of the game *Zap'T'Balls* was totally amateurish. This game is one of the best games ever produced on the CPC. It is incredibly well programmed and is totally amazing. Just because you poor English people do not have enough money to buy a 6128 or to upgrade your CPC it is no excuse to write such a bad review. This game is worth at least 95 per cent, not just 85 per cent.

Georg Odenthal, *Germany*

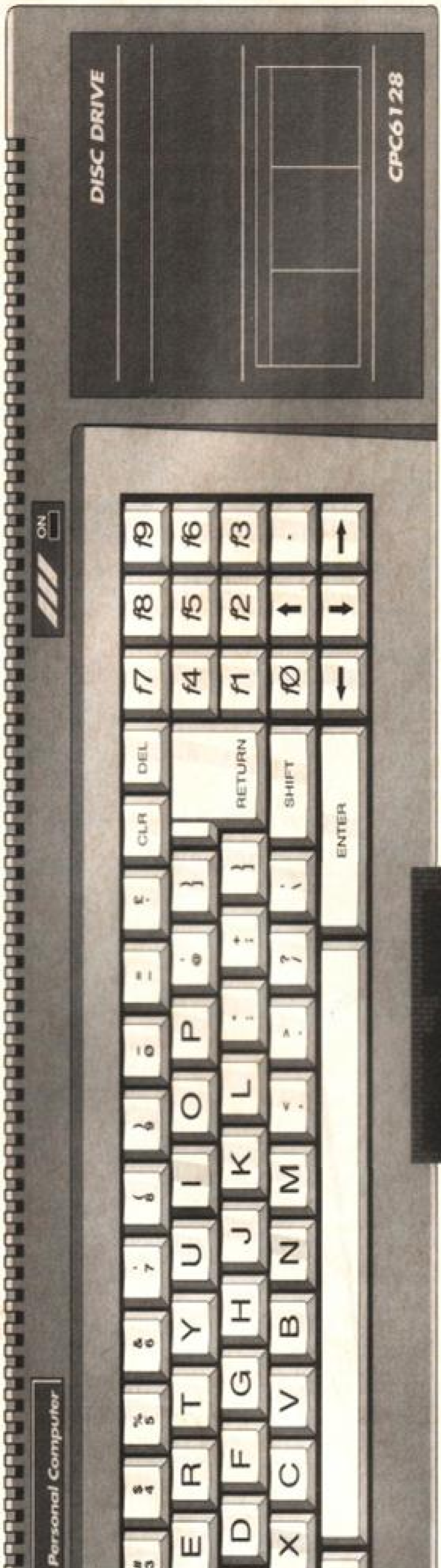


Zap is a bit like the remake of Invasion of the Body Snatchers. The effects might be better, but it's as dull as an Open University Lecture on algorithms.

Poor? POOR? Excuse me, but isn't that just a tad patronising? According to our recent reader survey over half of our readers have got 6128s. And anyway, we've got a 6128 *Plus* in the office, and *Zap'T'Balls* still looked like poor rip-off of *Pang* on that. *Zap* (or *Balls* as we like to call it around the office) was incredibly well programmed, sure, but it was lacking in the gameplay department. Basically it was more like a demo that had an element of playability, but it was no classic. Given a choice of *Zap* or *Chuckie Egg* (which, let's face it, has graphics that are so primitive they look like they belong on the wall of some cave) I know which one I'd rather play, and it hasn't got a Z in the title. Personally, I think Simon was a bit too generous giving *Zap* 85 per cent. **Dave**



Pang, the original and still the best. Okay so the graphics aren't as good as Zap's but that's the only way it loses out.



QFORTH

Question: Can Simon Forrester program in FORTH? Answer: No, he can't. Problem? Not at all! This new package not only provides a working version of the language, but it handily also has a FORTH tutorial tacked on to the side.

CPC snobs like me always like to think they know everything they'd need to about anything that comes their way. In eight months I've not met anything that even came close to challenging my knowledge of the CPC and computing in general (*he's a modest one, is our Simon – Dave*). So when *QFORTH* came along, blindly panicking seemed like the obvious course of action.

The first thing you'll notice about this package is that it runs solely in CP/M 2.2. Why the author chose CP/M, I'm not quite sure, but the choice of 2.2 over CP/M Plus (the version that runs on the 6128) is a very good idea – 6128 owners get a copy of CP/M 2.2 as well as the updated version when they buy their machines, meaning this package is compatible on every CPC.



You get an example program with the package, Snake, which is surprisingly small.

A short course in FORTH

FORTH, then. Eekarama. What am I going to do? I know, something I really hate doing (it's almost like an admission of defeat) – I'll read the manual. This is where things really take off; as well as full instructions on how to use the package you'll also find quite a good introduction to the fundamentals of FORTH programming. This is not just a manual; it's almost a FORTH programming course.

On to the package, and after making the usual copy as a work disk (why does CP/M insist on that?), you can jump straight in. Eekarama 2 – the Revenge of the Yikes. This package is not all that user-friendly (since when has CP/M ever been user-friendly, though?). A quick dive back into the manual should sort out your initial problems and get you well on the way to knocking up your first FORTH program.

All in all, this is a decent package; it's about as easy to use as most Z80 Assemblers and, with the help of the documentation, becomes a programming environment that's relatively easy to work with. As for the actual version of FORTH, I can't really vouch for its integrity, so I consulted *AA*'s Advanced Languages Department (some bloke I dragged in off the street) which gave the result I was hoping for – everything's there and working if you need it.

To boldly go

The question remains, why would you want to learn a new language? It's simple, really. You see, BASIC is all all very well, but it's got its limitations. For instance, you're not all that likely to write a fully commercial game in it; you'd leave that up to Machine Code.

If you want to write a program that makes extensive use of graphics or complex mathematics, you'd probably be best to write it in LOGO. PASCAL, on the other hand, is good for handling loads of text.

So what exactly is FORTH good for? Well, it was developed in the 1960s by Charles H Moore, as a much more structured but flexible programming language. Its uses vary massively, but it's often used for creating games. Anyway, stand by for a slightly more in-depth language round-up in an issue coming soon.

Celebrate good times

There's another aspect to this package though; its implications for the CPC market. I'm talking about the label on which the package has been released – it's completely new to me. That's right folks, we've got another software house willing to release serious packages on the CPC. This can only be good news, as serious enthusiasts need not shell out their hard-earned cash for a PC to use more varied or specialised systems; yet again the humble old CPC can come up with the goods.

To sum up (what else are final paragraphs for?), if you want to learn FORTH, or you already know it and want a working version, look no further. It even doubles as an Assembler. **Simon**



And this is what QFORTH code looks like when using the vocabulary for Z80 assembly.

Gubbins

At the time of printing, the price had not been announced, but by the time you read this, you'll be able to find out from the following address: Software Promotions, 6 Langley Close, Hightown, Merseyside, L38 9GG.

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When the **MULTIFACE** was launched in 1986, it was an outright winner. No one has ever come up with such a powerful, useful add-on. Labeled *the* ***ESSENTIAL CPC COMPANION***, this **MULTI**purpose inter**FACE** proved to be an absolute Godsend for the Amstrad CPC users. Remember the first disk drive on the CPC 464? Suddenly the loading took seconds rather than minutes from tapes. Except that there was not much to load - very little had originally been released on disks and there was no facility to transfer programs from tapes to disks.

THE SAVIOUR

This is one area where the **MULTIFACE** saved everything - literally. The black magic box could stop anything any time and **SAVE** it to disk or tape. When the 6128 came with a built-in drive, it was left again to the **MULTIFACE** to do all the transferring - and to perform other miracles...

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ACTION!

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INFINITE LIVES

listed in this magazine and you'll *never* loose. The MULTIFACE comes with a built-in **TOOLKIT** that lets you inspect/alter/dump the CPC RAM. It also has its own 8K RAM and 8K ROM. Many top programs were written with the aid of the TOOLKIT and the extra 8K RAM. And do you like the **screen shots** in this magazine? They are all produced using the **MULTIFACE!**

When we announced earlier that we were to pull out of the 8-bit market, the surge of interest in the **MULTIFACE** was such, that we had to make many more. And not just the MULTIFACE - we also have the one and only disassembler,

THE INSIDER

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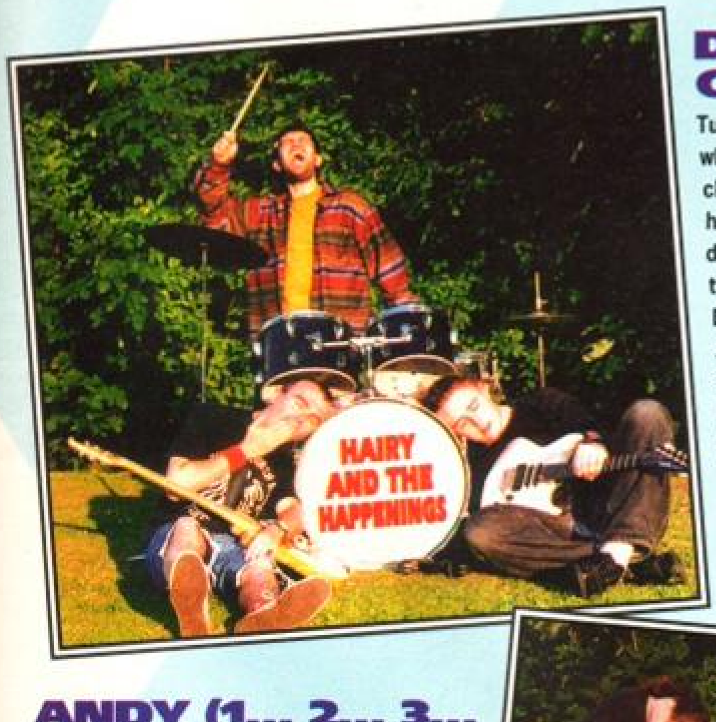
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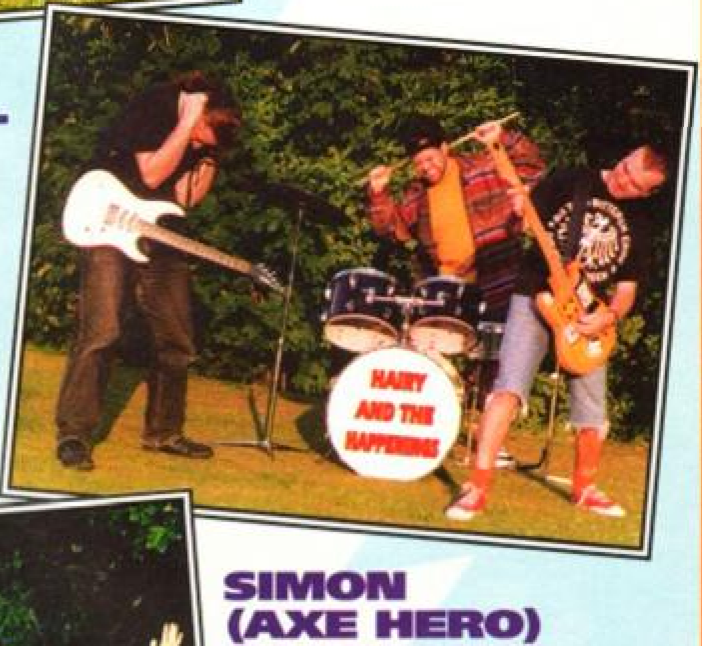
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You ain't heard nothing like it, and with any luck you'll never have to. When the AA crew had a jammin' sesh, they caused a rock and roll revolution – Jim Morrison turning in his grave.



DAVE (COZY) GOLDER

Tub-thumping was a natural choice for Dave who spends most of his day thumping his chest, anyway. And strangely, just as happens in the office, Andy and Simon didn't take a blind bit of notice of him. As the Hawkwind-inspired drum solo – which Dave has named *Warriors on the Edge of A Nervous Breakdown* – meandered into its seventy-eighth minute, Andy finally lost his rag and drove his motorbike right through Dave's entire kit. "Wow, rock and roll!' roared Dave and immediately made plans to finish off every gig in a similarly nihilistic fashion. 'We'll do for drums what The Who did for guitars," he burbled.



ANDY (1... 2... 3... 4...) OUNSTED

Being an aging punk at heart Andy has no truck with musical ability. Says the Little O, "It's not how well you play, it the energy, the anger, the feeling you get in there. Leave all that technical virtuosity rubbish to the metal heads. Give me power chords and an attitude any day."

"I'd rather give him a guitar lesson," screamed Simon over the noise.

"Pardon?" said Dave



SIMON (AXE HERO) FORRESTER

"Stand back you no hopers. This is how to play guitar," growled Simon, launching into simultaneous renditions of *Smells Like Teen Spirit*, *Beethoven's Fifth* and the theme from *Jackanory*, and managing to break the world record for fitting the most notes into a single bar. For an encore Simon phoned up the local kebab shop on a tone dialling telephone, using only his guitar and his perfect sense of pitch. "We're not worthy," chorused Dave and Andy. Simon agreed.

Reviewed







Go cartin' 2: the reviewers strike back

Yeah, yeah, so cart games are fast and powerful, but flashy graphics and instant loading don't automatically add up to a decent game. Dave and Simon continue the AA complete round-up to every cart game currently available, separating the Jurassic Parks from The Last Action Heroes...

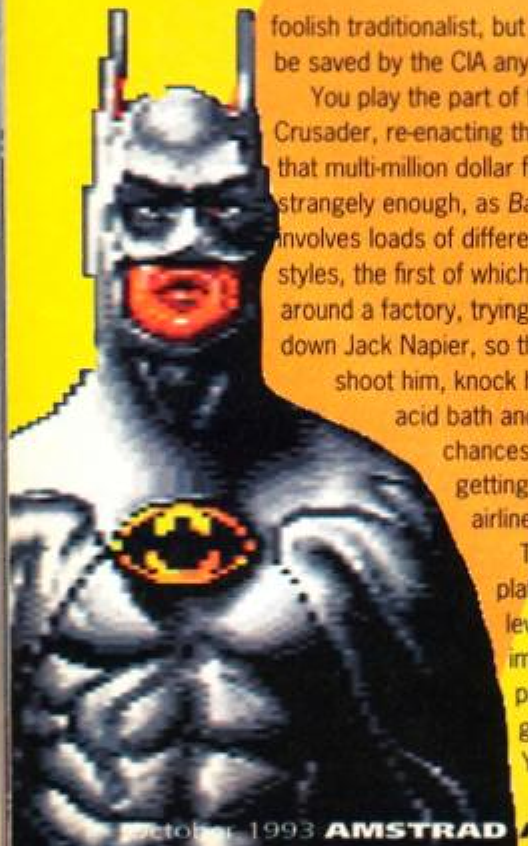
Batman

Available from The Trading Post

Three questions – first, where's the merit in being named after a mouse with wings? Second, how the hell is he supposed to go to the toilet wearing that outfit? Third, doesn't that cloak just get a teensy bit in the way during a fight? I mean, what's the point in being rescued by a small, constipated rodent who keeps tripping over own cape? Call me a



Before he went into action Batman slipped on his mask – he knew he shouldn't have left on the floor all sweaty after the night before.



foolish traditionalist, but I'd rather be saved by the CIA any day.

You play the part of the Caped Crusader, re-enacting the plot of that multi-million dollar film known, strangely enough, as *Batman*. This involves loads of different gaming styles, the first of which is running around a factory, trying to track down Jack Napier, so that you can shoot him, knock him into an acid bath and ruin his chances of ever getting a job as an airline hostess.

The opening platform-action level is an impressive piece of game design. You dash



It was a day like any other (except Tuesday 5th November 1972 – it was definitely nothing like Tuesday 5th November 1972).

around the factory, lobbing a limitless supply of shuriken-type things at a not-quite-limitless amount of bad guys (or you can just beat the hell out of them if you prefer that sort of thing). The icing on the cake for this level is the bat-rope which you use to swing from platform to platform.

But it's downhill from here on in. You see, had the remaining levels been as well thought out as the first, I would have slapped a whopping great 85 per cent at the end of this review. But they aren't, so I won't, and here's why.

In level two you're at the wheel of the Batmobile as it belts along down Gotham's streets hotly pursued by a van – yes folks and folkesses, a transit. Now forgive me if I'm wrong here, but I thought the Batmobile was supposed to be slightly nippier than your average delivery van. I also thought it was supposed to be made out of slightly stronger stuff than papier maché – glancing the side of a VW Beetle (*watch what you're saying about those wonderful cars – Dave*) shouldn't really do much harm. But





The Joker was too clever for Batman, who had only got a 'C' in Design Technology.

it does in this game – watch that energy level plummet.



So there's a transit van hacking along behind you, forcing you to drive increasingly faster through masses of traffic containing maniac Beetle drivers determined to cut you up. This is not fun. It's also not possible to complete. The single time I managed to get all the way to the Batcave level (and I tried enough times), I drove toward the cliff expecting the automatic door to be automatic. It wasn't, and I died. It turns out I was about one pixel out of line.

I really am deeply sad about this – playing the excellent first level really makes you think you've



The henchmen appeared from nowhere. Batman had nowhere to run to. So he did, and confused the hell out of the henchmen.

got a really decent game on your hands, and to be quite honest, I really wanted the rest of the game to follow suit. Initially, when you realise the variety in game styles they've managed to incorporate into one game, you'll be impressed, but after 10 or 20 attempts to complete the driving section, you'll be frustrated at being locked off from the rest of what could be a wonderful game.

Unless someone comes up with some form of keypress cheat, this game is pretty much reduced to one level. For a one-level game that, once you get the hang of it, will take you around about 15 minutes to complete, it's still entertaining, but not worth the dosh. **Simon**

30%

Where to go

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Barbarian 2

Available from The Trading Post



Can't we sort this out without resorting to violence? I've only just cleaned my axe.

Get ready for a rant! I wish there wasn't any censorship. I wish I could describe to you just how atrocious this game is using the language it deserves. Unfortunately, in the interests of taste, I'm restricted to such phrases an, 'pretty bimmin' awful'.

The game opens with you, playing either an unhealthily muscle-bound barbarian or a Newton-defyingly top-heavy princess, being attacked by a red blob on legs (*sounds like you after you've been lying in the sun too long – Dave*). This blob has one simple attack pattern – walking forward and kicking you. Great – so you just have to kick back... and kick, and kick, and finally it decides to die. The next obstacle is a river of lava, which you just have to jump over. This doesn't pose too much of a problem, so it's on you trudge.



Look, I don't care how big your sword is. You're not coming in here without a tie.



It's just a blimmin' hole. There's no need to make a song and dance about it.

Strange beast number two is a purple thing on legs which just stands there stabbing away in your direction; you try to get the occasional swing back at it, but you spend far too much time reeling from its annoyingly well-timed attacks to make a decent attempt.

Not that there's much point in trying because things don't get any better. You can be attacked by something that's not even on the screen yet, and you'll go flying backwards into a pit without being able to retaliate. Then there are the times when you walk on to a screen and get knocked straight back out again by some nasty before you can even raise your sword.

What more can I say? (*About another two paragraph's worth by the look of it – Dave.*) The game is moderately well programmed, with average graphics, but having said that, *B2* can't really, in the sense of the word, be called entertaining. In fact, the phrase 'dire rubbish that makes you realise how much fun GCSEs really are' springs to mind.

If you buy carts to take advantage of well-thought out games that use the extra capabilities of the Plus, why don't you do just that and avoid buying *Barbarian?* **Simon**

35%

Pang

Available from The Trading Post

Earlier this year the CPC world went wild over a game called *Zap'T'Balls*, which was odd, because basically it was just a pale imitation of *Pang* with most of the more interesting ideas left out. Sure, *Zap* looked gorgeous, but it didn't have a fraction of the playability.

Pang is based on a simple concept which has been cleverly adapted, intriguingly built on, entertainingly expanded and generally meta-morphosed into a game that's more addictive than chocolate hobnobs. It's also one of those games that sounds completely naff when you try to explain it on paper, so don't let the next bit put you off.



Don't worry about the crab. He's not interested in your toes, but loves gobbling up any bubbles that bounce his way.



Pang's got more exotic locations than your average James Bond film, starting off in Japan in the shadow of Mount Fuji.

There are these bubbles, you see... yeah, okay, not a promising start, but bear with me. You've got to burst all the bubbles on each screen to progress to the next one. You do this by ordering about some bloke who looks like a reject from a Manga comic and is armed with a weapon that, get this, creates walls. And if a bubble bounces into these walls it blows up, right? Wrong – it disintegrates into loads of smaller bubbles. The only bubbles you can actually obliterate completely are the smallest ones. And if that wasn't bad enough, you can only build one wall at a time and they vanish either after a few seconds, or if a bubble hits them. And if any of the bubbles hit you, say bye bye to a precious life.



To complicate matters further there are platforms which make the bubbles ricochet around the screen like it's party time on the Dodgems and birds which temporarily disable your gun if they fly into you. But it's not all bad news. There are loads of power-ups which which do things like freeze all the bubbles for a few seconds, turn your weapon into a machine gun or allow you to create two walls at once.

Each screen has its own unique layout and background graphics to keep the game fresh. Admittedly the graphics aren't gobsmacking, but they're still better than average, even if the bubbles do look a bit solid.

Pang is in the 'one more go' category of computer games. It's packed with details, power-ups and dangers that keep the gameplay fresh. And on cartridge, when you can get it up and running in mere seconds, it's almost impossible *not to* load up when you've got a spare few minutes. **Dave**

90%



Quick! Destroy those bubbles before he whips out a karaoke machine and sings something corny like Blue Moon.

Klax

Available from The Trading Post

"Hello, good evening and welcome to the very first edition of this new BBC comedy quiz *What Game Is It Anyway?* And our guests tonight are Tony Slattery, Paul Merton and John Sessions. And if you'd like to look at you monitors please, Lloyd Grossman will guide us around the first game..."

"As we first enter this rather splendid game the first impression we have is definitely one of *Tetris* – there are coloured blocks that fall towards you which you have to arrange in lines



If I'd spent every minute I've ever spent playing Klax watching Blake's Seven vids instead, I'd be certifiably mad.



Whoops! There goes a bluey as the vicar said to the... er... no this joke ain't gonna work.

to increase your score; all of which is very much in the style of the classic Russian puzzler.

"But there are subtly different. The blocks approach on a conveyor belt; you have to collect them in a bucket which can hold up to five blocks; you then move the bucket to drop the blocks in the desired position. Graphically, it is also very dissimilar, with much more colour and a feeling of 3D. In addition, there are goals to achieve to complete each level, such as forming five diagonals or scoring a certain number of points.

"So let's look at the evidence: blocks, lines, conveyor belts, that rather splendid bucket. What kind of a game is this? Over to you, David."

"Well Paul, what game do you think this is?"

"Innit marvellous, eh? Haven't got a clue what it is, but if it's got blocks it's bound to have some nonsensical title like *Vlix*, *Pillox* or *Plax* or something like that."

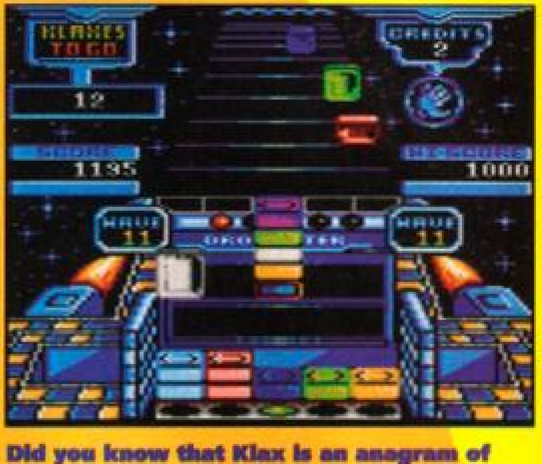
Rapturous applause from the audience.

"Does that give you a clue, Tony?"

"Not at all, but it does remind me that if you turn over to Channel 4, you'll catch me on..."

"Thank you, Tony. John, any idea?"

"I'll be delivering this answer in the style of a pretentious, windbag, one-joke, has-been perhaps, indeed, never-was, TV personality. Methinks it doth remind me the early cubist, proto-surrealist, pre-dadaist school of games. Unless I'm very much mistaken, which I rarely am,



Did you know that Klax is an anagram of Xkla. Is that weird or is that weird, huh?

tis *Klax*, that classic, fast and furious puzzler, and verily, complete with three levels of difficulty."

Even more rapturous applause.

"Yes indeed, *Klax* it is. Let's welcome *Klax* out from behind the..." Fzzzz... click!

NORMAL SERVICE WILL BE RESUMED AS SOON AS POSSIBLE. **Dave**

90%

No Exit

Available from Wave

There are two sorts of bad games; the truly awful ones that you can be great fun to give a good slagging in the review; and the ones that are so dire you dread having to write about them in case your brain implodes in protest. *No Exit* belongs to the second group so if this review seems a bit brief, please understand that I'm keeping it short in the cause of self-preservation.



Why make the sprites large enough so that you can actually see what's going on when that would only obscure the backgrounds? Because the backgrounds are rubbish.

No Exit's a *Street Fighter*-style one-to-one beat-'em-up with one novel twist – actually, not so much a novel twist, as an O-level F-grade English essay twist. Y'see you don't only lose energy when you're hit by an opponent; you lose it whenever you perform a move and miss. If you land a hit on your opponent, you gain energy. And if you get a spare



moment you can do a bit of deep breathing to replenish your energy as well.

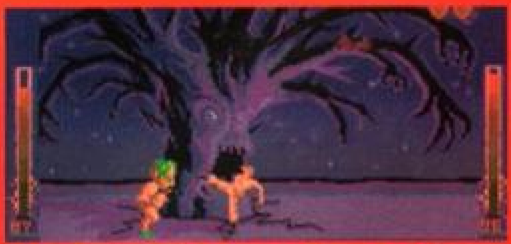
All fine and dandy, except for two points. First, you spend more time trying to avoid your opponent in the hope that he'll wear himself out which, frankly, does not make for an exciting game. You could try to spice things up by going on the attack occasionally, but that leads me to point two – the controls are so bad it's almost impossible to carry out any of the moves when and where you want to.



Why the bear from the Fox's Glacier Mint ads has wandered in is anybody's guess.

And the sprites are so puny and minuscule they look they'd be hard pressed to fight their way out of a particularly soggy paper bag. I





Typical. Just when you're about to deliver a winning kick you get eaten by a tree.

would say that fighting games cry out for large sprites, but that goes without saying.

It's dull, it's irritating and it's a complete waste on cartridge. Eating your own toenail clippings is more fun. **Dave**

23%

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	CASS	DISK
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Fun School III or IV 5-7	£10.95	£13.95
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Playdays 3-8	£10.95	
Lets Play with Words 4-8	£12.95	£12.95
Fun with Words 7-	£8.50	£11.95
Read Right Away 1 5-8	£9.95	£12.95
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Lets Play Numbers 4-8	£12.95	£12.95
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Primary Maths 3-12	£24.95	£24.95
Fun with Numbers 7-	£8.50	£11.95
Target Maths 6-13		£12.95
Micro Maths 11+	£24.95	£24.95
Better Maths 12-16	£8.95	£12.95
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The Three Bears 5+ (6128)		£12.95
Five on Treasure Island	£9.50	£11.95
Granny's Garden 6-10 (6128)		£16.95
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Answer Back Jnr Quiz 6-11		£11.95

FACTFILE SERIES FOR ANSWER BACK JNR QUIZ

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All printers listed below are suitable for use with AMSTRAD CPC, ATARI ST, COMMODORE AMIGA, IBM PC & COMPATIBLES

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CITIZEN 120D + 9 Pin Mono	£139.95
STAR LC20 9 Pin Mono	£149.95
STAR LC100 9 Pin Mono/Col	£189.95
STAR LC24-20 24 Pin Mono	£209.95
STAR LC24-100 24 Pin Mono	£219.95
STAR LC24-200 24 Pin Mono	£259.95
STAR LC24-200 24 Pin Mon/Col	£289.95

All prices include cable & delivery

PRINTER RIBBONS

Quantity:	1	2	5
DMP 2000/3000	£3.75	£7.00	£16.25
CITIZEN 120D	£3.75	£7.00	£16.25
PANASONIC KXP10/1180	£3.75	£7.00	£16.25
STAR LC10/20	£3.75	£7.00	£16.25
STAR LC24-10/20	£3.95	£7.50	£17.50
PANASONIC KXP1124	£3.75	£7.00	£16.25
STAR LC200 Mono	£4.95	£9.50	
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Other printer ribbons please phone

RIBBON RE-INK £12.95

BUDGET CASSETTES £3.75 EACH

Chuckie Egg	Chuckie Egg II
Continental Circus	Dizzy Yolk Folk
Double Dragon II	Dragons of Flame
Emlyn Hughes Soccer	F15 Strike Eagle
F16 Combat Pilot	Flimbo's Quest
Golden Axe	Gunship
Hudson Hawk	Lotus Turbo
Pitfighter	Rick Dangerous II
Rodland	Silent Service
Streetfighter	Terminator II
Trivial Pursuits	Turbo Tortoise
Turrican II	WWF Wrestlemania

MANY MORE GAMES STOCKED. PLEASE WRITE OR TELEPHONE FOR LATEST PRICE LIST. PRICES INCLUDE POSTAGE & PACKING IN U.K. PLEASE MAKE CHEQUES & POSTAL ORDERS PAYABLE TO: O.J. SOFTWARE AND SEND TO: O.J. SOFTWARE, 273 MOSSY LEA ROAD, WRIGHTINGTON, NR. WIGAN, LANCS WN6 9RN (MOST ORDERS DESPATCHED BY RETURN). ACCESS & VISA ORDERS TEL/FAX ON 0257 421915
MON-FRI 9.00 - 17.30, SAT 9.00-12.30 (ANSWERPHONE/FAX OUTSIDE HOURS). OVERSEAS ORDERS WELCOME (SOFTWARE ADD £1 PER ITEM POSTAGE; PAYMENT BY CREDIT CARD, EUROCHEQUE OR BANK DRAFT)



Cheat Mode

Impress your friends. Thrill your relations. Blast through that game like you're an old pro. It's easy when you're using one of Lee Rouane's patented Acme© all-purpose cheats.



Since when did Batman have a green head? He looks like something out of Judge Dredd.

LOTUS ESPRIT

The irrepressible Andy Price pokes one in the eye for petrol stations every where with his infinite fuel poke for *Lotus Esprit*.

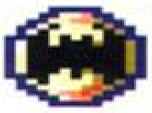
```
OAOK 1·'·Lotus·Esprit·Turbo·Challenge·tape·po
     ke
AAJH 2·'
EAEF 3·'·by·ANDY·PRICE
AALH 4·'
CAIC 5·'·Fuel
AANH 6·'
FAFN 10·RESTORE:MEMORY·&1F00
PAAE 20·MODE·1:PRINT"······Lotus·Esprit·Turbo
     ·Challenge"
IAGL 30·LOCATE·6,4:PRINT"by·ANDY·PRICE"
NANM 40·PRINT:PRINT"Insert·tape·then·press·P
     LAY"
GAIH 50·LOAD"tload.bin",&2000
DANM 60·DATA·21,00,20,22
EAOA 70·DATA·46,20,f3,31
FAJA 80·DATA·fe,1f,cd,7c
EAAH 90·DATA·20,cd,6f,22
EAHJ 100·DATA·af,32,7a,22
EAGM 110·DATA·cd,21,22,dd
EAEM 120·DATA·21,cb,22,cd
EAFD 130·DATA·48,20,01,1c
EAIJ 140·DATA·3c,cd,41,21
EAIM 150·DATA·dd,21,cb,22
EAAK 160·DATA·cd,48,20,c3
DAPP 170·DATA·25,20,00,00
DAHG 175·RESTORE·60
FAII 180·FOR·x=&BE00·TO·&BE2D
FABK 190·READ·a$:a=VAL("&"+a$)
HAOO 200·POKE·x,a:chk=chk+a:NEXT
CADK 220·GOTO·240
EAJD 240·DATA·3e,01,32,61
EAPD 250·DATA·41,32,7d,41
EAMG 260·DATA·3e,01,32,5c
EAFB 270·DATA·41,32,78,41
EAPJ 280·DATA·af,32,61,3a
EAOH 290·DATA·3e,d6,32,86
EAJJ 300·DATA·26,c3,d0,2d
DACP 310·DATA·00,00,00,00
DADP 320·DATA·00,00,00,00
FABH 325·chk=0:RESTORE·240
FAID 330·FOR·x=&2000·TO·&201B
FAOJ 340·READ·a$:a=VAL("&"+a$)
HAEP 350·POKE·x,a:chk=chk+a:NEXT
GAEB 360·IF·chk<>&92A·THEN·380·
DADA 370·CALL·&BE00
HAMF 380·PRINT"Error·in·poke"
```

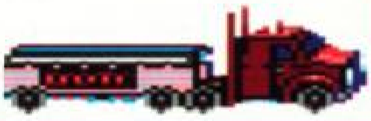
BATMAN THE MOVIE

Steaming in with an excellent cheat for that graphically superior platformer *Batman The Movie*, comes Andrew Price clad in tight blue tights and with an inane grin on his face. (He comes from the school of Method Cheating, you see).



```
IADO    100·'·Batman·the·Movie·-
·tape
EADL 110·'·by·ANDY·PRICE
HAAF 120·'·inf·energy,·lives
AALN 130·'
FAPL 140·DATA·21,16,bd,36,c3,23
FAFP 150·DATA·36,0e,23,36,be,c3
FACN 160·DATA·9e,98,21,17,be,22
GAHF 170·DATA·56,a4,c3,0f,a4,dd
FACL 180·DATA·21,c0,a6,11,b2,00
GAFI 190·DATA·cd,4f,a6,21,2a,be
GAOB 200·DATA·22,70,a7,c3,ea,a6
FAAP 210·DATA·af,32,53,21,32,fe
FALF 220·DATA·24,3e,11,32,16,32
FADI 230·DATA·c3,f5,16,00,00,00
FAKH 240·FOR·x=&BE00·TO·&BE38
FAOJ 250·READ·a$:a=VAL("&"+a$)
GAKH 260·POKE·x,a:y=y+a:NEXT
FANG 270·IF·y<>&17AA·THEN·300
FABI 280·MEMORY·&8FFF:LOAD""
DAEA 290·CALL·&BE00
HAKK 300·PRINT"Error·in·cheat"
```





Multiface Pokes

2153,AF	Infinite Lives
24FE,AF then	
3216,11	Infinite Time



How come if Batman dressed to blend in with the night he was partnered by someone in a bright green and yellow leotard?

Welcome to the pokers' paradise

Armed with their steaming hot red buttons, Paul Hornsey and Alex Cochrane are here to take you through those nightmare stages on your favourite games, proving yet again that cheating CAN be profitable. As usual, the initials after the game name tell you who you should thank for the cheat. Take it away lads...

Game	Format	Poke, Address	Effect
Elite (PH)	Tape	4611,00	Infinite missiles
		30D2,3E then	
		30D3,FF	Infinite energy bombs
		7115,AF	Infinite hyperspace fuel
		8706,A7	No laser temp limit
		185D,A7 then	
		5AE0,00	Y cloaking device
		50E2,21	Infinite credits
		888B,3E then	
		888C,FF then	
		888D,A7	ECM 'E'
		43BF,C9	No energy loss
		50AE,AF	Infinite cargo room
		462C,A7	Infinite escape pods
Wonderboy (PH)	Tape	52CD,C0	Infinite axes
New Zealand Story (AC)	Disk	C64A,No	Where No = number of lives
		5811,FF	255 lives in every game
		7E0C,C2	Infinite lives
Nemesis (AC)	Tape	9D74,00	Infinite lives
		9B9F,18 then	
		9BA0,05	Invulnerability
Killer Gorilla (AC)	Tape	5118,00	Infinite lives
Shadow Dancer (AC)	Tape	41F0,00	No walking enemies
		470E,A7 then	Enemies don't
		4729,C9	shoot or throw knives



INFILTRATOR

Andrew Cranwell, the man with the multi-colour letter heads, has sent us more tips than you'd find in the Andes (well, maybe not quite that many). First, here are the names of the good guys and bad guys in Ocean's puzzler, *Infiltrator.*

Good Guys: DWEEZIL, GIZMO, WHIPPIE, NAPLES, HAYMISH, SETH, GEOFF, GOMER
Bad Guys: BOOMER, BUZZ, ZIPPY, KOMIE, RHAMBOW, WEASLE, SCUM, RATTIE

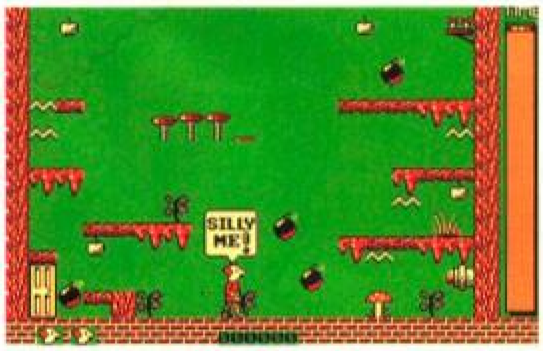
TINTIN ON THE MOON

Andrew also suggests that on the tape version of *Tintin On The Moon,* when you're requested to rewind the tape, leave it playing and you will be able to look at the later levels. This works on the whole game except the final part, which has to be reached by the boring old way of not cheating!



CONTRAPTION

A bit of a joint effort here between master meddler Alex Cochrane and yours truly. *AA*'s covertape game from issue 94 ,*Contraption,* is the victim and infinite lives is the result.



Weird. Strange. Odd. Curious. (Hang on. What is this? A caption or a Thesaurus? – Dave.)

```
IALM 100·'Contraption·(AA28)·Cheat
IACM 110·'Alex·Cochrane·&·LRouane
GADD 120·'Infinite·Lives
AALN 130·'
IADJ 140·DATA·21,D0,07,11,C0,92,3E,F2,CD,A1,BC
IAHH 150·DATA·3E,05,32,C9,5E,CD,00,9A,00,11,D0
IAMM 160·DATA·07,21,FF,A8,0E,07,CD,CE,BC,21,3D
IAFI 170·DATA·A0,CD,25,A0,11,D0,07,06,08,D5,CD
IAMO 180·DATA·77,BC,E1,CD,83,BC,CD,7A,BC,3E,05
IALI 190·DATA·32,C9,5E,C3,00,9A,63,6F,6E,74,72
FAHC 200·DATA·61,70,74,*ALEX*
EAMD 210·chk=0:x=&A000
IAIA 220·READ·a$:IF·a$="*ALEX*"·THEN·250·
GAPC 230·a=VAL("&"+a$):POKE·x,a
HAFN 240·x=x+1:chk=chk+a:GOTO·220
GAMC 250·IF·chk()&1F06·THEN·390
FADM 260·CALL·&BBFF:CALL·&BB4E
GABP 270·INK·0,0:INK·1,18:BORDER·0···
JAJN 280·LOCATE·10,2:PRINT"CONTRAPTION·AA·28"
JALG 290·LOCATE·10,3:PRINT"=================="
FAOM 300·PRINT:PRINT:PRINT
KAPH 310·PRINT"Load·from·TAPE·or·DISC(T/D)"
EADH 320·WHILE·INKEY$=""
GABB 330·IF·INKEY(51)=0·THEN·360
HACL 340·IF·INKEY(61)=0·THEN·CALL·&A014
EAOA 350·WEND:GOTO·320
OAPH 360·PRINT"Insert·TAPE·28·SIDE·2·Rewound
     ·To·Start"
MABM 370·PRINT:PRINT"Then·Press·any·key.....
     .."·····
FAHH 380·CALL·&BB18:CALL·&A000
KABK 390·PRINT"Data·Error·Old·Bean...":END
```

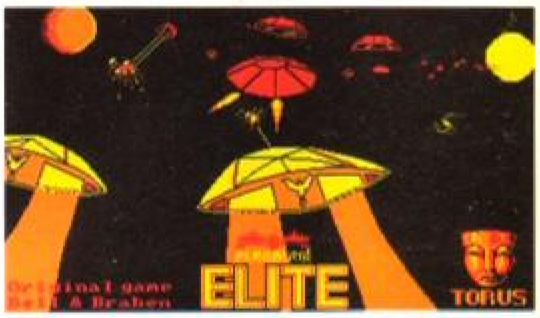
Multiface Poke

5EC9,05 Infinite Lives

ELITE

Paul Hornsey is fast becoming one of the Cheat Mode elite poke writers, and here he is with a superb tape cheat that was originally requested way back in *AA52* but has never previously seen the light of day. The cheat is for that all-time red-eye and orange afro maker, *Elite*. You can leave out the cheats that you don't want by deleting the relevant DATA line. Take it away Paul me old mucker...

```
HAFC  1·'······TAPE·CHEAT·for·"ELITE"
HAOA 2·'·········By·PAUL·HORNSEY·········
AAKH 3·'
HAFJ 10·DATA·21,76,3B,3E,C3,77,23,3E,11,77
HAFI 20·DATA·23,3E,10,77,C3,00,3B,32,46,5B
HANK 30·DATA·14,E5,F5,23,7E,FE,41,C2,21,10
HAOK 40·DATA·F1,E1,E9,21,3A,01,3E,C3,77,23
HAGI 50·DATA·3E,40,77,23,3E,10,77,21,76,3B
HAAK 60·DATA·3E,32,77,23,3E,46,77,23,3E,5B
IADB 70·DATA·77,F1,E1,E9,3A,37,BD,FE,CF,C2
```



Wait one cotton-pickin' minute. What have these games got against blue? First Contraption and now Elite – totally blueless,

THE JETSONS

Remember a couple of months back when the *AA* team couldn't get off the first level in Hi-Tec software's space-age platformer *The Jetsons*? Well, The Man Of Peace (I kid you not) in Ballybaley, Northern Ireland has certainly got off level one and gone way beyond, and here are his tips so that everyone else can too.

Level 1 – George

- From the start go DOWN and then take the LIFT.
- Go UP in the LIFT and then find and PRESS the 4 BUTTONS.
- GET the SPRAY and this should make MR SPACELY disappear from the televisions.
- If MR SPACELY is still present in the televisions, repeat the above process.
- Go DOWN in the LIFT, go UP, then UP in the LIFT.
- Go RIGHT and then proceed to go UP.
- Go RIGHT, then go RIGHT again; go DOWN, DOWN again and then go RIGHT.
- If MR SPACELY is here then go through the last step again
- If he isn't, go DOWN in the LIFT, go UP and then go UP again.
- Go LEFT and then go UP.
- Now go to your LEFT again, then find and PRESS the BUTTONS.
- COLLECT the SPANNER and then go DOWN and then go RIGHT.
- Go RIGHT once more and then go DOWN and DOWN again.
- Go to your LEFT three times and then go UP.
- Go UP and then go DOWN the LIFT.
- Go UP the LIFT and DOWN and DOWN again.
- Now go RIGHT three times and then go UP and UP again.
- Go DOWN the LIFT, and then go UP and PRESS the BUTTONS.
- Collect the PLUNGER, and then go to the LIFT where you used the SPANNER.
- Go DOWN, then DOWN again and then go to your RIGHT.
- Go RIGHT again, RIGHT once more, and then keep going RIGHT until the end.

Level 2 – Race Section

Travel at full speed as much as possible, but, take care of speed restriction zones. Collect as much money and time as possible in the race sections.



In this level there is no need to take block holes as there are plenty of clocks to collect for time.

Level 3 – Jane

- From the start go LEFT and then go LEFT again.
- Keep going LEFT until you get ELECTRONIMO and then go RIGHT.
- Go RIGHT, DOWN, LEFT, then DOWN again.
- Go LEFT, go RIGHT and then go RIGHT round the CORNER.
- Go DOWN, COLLECT the AQUALUNG, go UP and then go LEFT.
- Go DOWN, go UP in the LIFT and then go LEFT (don't worry, you can walk on water).
- Go UP, go RIGHT, go RIGHT again and get the REMOTE CONTROL.
- Go LEFT, LEFT again, go DOWN, go RIGHT and COLLECT ELECTRONIMO again.
- Go to LIFT, go DOWN in the LIFT, go LEFT, go LEFT again.
- Go UP, RIGHT, DOWN in the LIFT, then LEFT.
- Go DOWN, go RIGHT, go RIGHT and then go RIGHT once more.
- Go RIGHT again, go UP and you have completed the level.

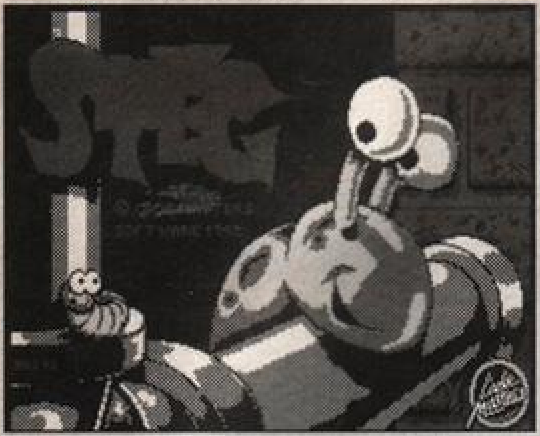
Level 4 – Race Section

- Follow the same tips given for level two.

Why are Hannah Barbera cartoons so rubbish?

STEG THE SLUG

You can never keep a good hacker down my old dad used to say, and here comes celebrated cheat supremo Phil Howard to prove that my old dad wasn't just a dithering idiot after all. *Steg The Slug* feels the wrath of Phil's excellent poke writing skills this time...

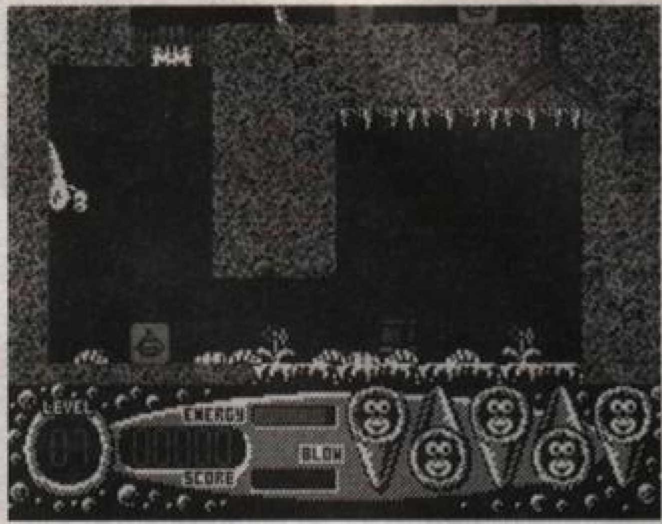


I object. Slugs are not cute! They're vile. What next? A game starring a sea cucumber?

```
FAHI 100·'·Steg·The·Slug
GAJN 110·'·Infinite·energy
JAON 120·'·Improved·bubble·blowing
FAIO 130·'·By·Phil·Howard
AAMN 140·'
FAHB 150·DATA·21,00,22,11,00,02
FAOK 160·DATA·01,00,02,ed,b0,21
FAHF 170·DATA·14,01,22,43,02,c3
FAMI 180·DATA·03,02,3e,3a,32,61
FAPL 190·DATA·2b,3e,04,32,15,2b
DAHN 200·DATA·c3,b0,29
FAEE 210·MEMORY·&2000:MODE·1
EADM 220·FOR·x=&100·TO·&120
FAMD 230·READ·A$:A=VAL("&"+A$)
EAPF 240·POKE·X,A:Y=Y+A
BAGP 250·NEXT
FAAD 260·IF·y<>1761·THEN·350
JANE 270·INPUT"Infinite·energy·";a$
EACA 280·a$=UPPER$(a$)
HACB 290·IF·a$="Y"·THEN·POKE·&115,&C9
IAMM 300·INPUT"Better·bubbles·";a$
DAMP 310·a$=UPPER$(a$)
HADB 320·IF·a$="Y"·THEN·POKE·&11A,&1F
DAAD 330·LOAD"",&2200
CAKK 340·CALL·&100
GANE 350·PRINT"Data·error"
```

Multiface Pokes

2B61,C9	Infinite Energy
2B15,1F	Better Bubbles



The one thing I'd really like to go into this game armed with is an infinite supply of really potent salt.

```
HAMJ 80·DATA·89,01,E5,F5,21,87,01,3E,59,77
HAOJ 90·DATA·23,3E,10,77,F1,E1,C3,41,01,E5
HAOM 100·DATA·F5,D5,21,30,9F,11,7D,10,1A,77
HACM 110·DATA·13,23,1A,FE,00,C2,62,10,77,3E
HAJN 120·DATA·30,32,06,9D,3E,9F,32,07,9D,D1
EAOO 130·DATA·F1,E1,C3,1E,5B
AAMN 140·'
NAMI 150·'·**·Leave·out·any·cheats·not·want
     ed.·**
AAON 160·'
HAHK 170·'·**·ECM·from·start·"E"·**·
IACB 180·DATA·3E,3E,32,8B,88,3E,FF,32,8C,88
EAFO 190·DATA·3E,A7,32,8D,88
HAJO 200·'·**·Inf.·Energy·bombs·**
IAKA 210·DATA·3E,3E,32,D2,30,3E,FF,32,D3,30·
IAIF 220·'·**·Cloaking·device·"Y"·**
HANF 230·DATA·3E,A7,32,5D,18,AF,32,E0,5A
HAJB 240·'·**·Inf.·Cargo·room·**
EAAP 250·DATA·3E,AF,32,AE,50
HAJH 260·'·**·Inf.·Escape·pods·**
EAHN 270·DATA·3E,A7,32,2C,46
JAED 280·'·**·Inf.·Hyperspace·fuel·**
EAHN 290·DATA·3E,AF,32,15,71
LADM 300·'·**·No·Laser·temperature·limit·**
FAIA 310·DATA·3E,A7,32,06,87··
GANB 320·'·**·Inf.·Credits·**
EAML 330·DATA·3E,21,32,E2,50
HAOC 340·'·**·No·energy·loss·**
EAKO 350·DATA·3E,C9,32,BF,43
GAMJ 360·'·**·Inf.·Missiles·**
EAAJ 370·DATA·AF,32,11,46···
NAHD 380·'·**·"Right·on·commander!"·Every·ki
     ll·**·
EAKF 390·DATA·AF,32,90,47·
AALN 400·'
LAML 410·'·**·Must·type·rest·of·program·!!·**
AANN 420·'
EAIO 430·DATA·C3,60,00,end
IAKN 440·MEMORY·&3AFF:LOAD"ELITE1":c=&1000
JAAF 450·READ·p$:IF·p$="end"·THEN·CALL·&1000
GAMF 460·x=VAL("&"+p$):POKE·c,x
EAGG 470·c=c+1:GOTO·450·
```

Are you befuddled by listings?

Don't panic! There's a full explanation of how to type in listings and what the codes at the beginning of each line mean in the Venture Forth section which starts on page 18.

ENDURO RACER

Another hot tip now for that golden oldie *Enduro Racer* (disk version) from the man in March, Andrew Cranwell. If you start racing and then type W E R O P (POWER mixed-up) and then hold down the whole of the function key pad (including full stop and cursors) you should warp straight to Level Four with 99 seconds under your belt. Only type in these cheats once, though, or the biker will stop. Try telling that to a Hell's Angel with a pub in his wing mirror.



BALLOON BUSTER

AA covertape pokes are becoming quite popular these days, so here's one for that really-hard-to-find-a-cheat-in game *Balloon Buster*. Infinite time must be a help for all those rainbow-coloured plastic inflatable murderers among you.

```
IAJD 100·'Balloon·Buster·Cheat
JAIE 110·'Expand·Routine·JW·Brown·
JAOB 120·'Cheat·Routine··LC·Rouane
IAHD 130·'AA·Covertape·Number·26
FABM 140·'Infinite·Time
AANN 150·'
LAGO 160·DATA·01,93,BE,21,8F,BE,CD,D1,BC,3E,
     C9,32,80,BE,C9,00
LAHJ 170·DATA·00,00,00,98,BE,C3,9F,BE,44,45,
     43,4F,44,C5,00,FE
LABN 180·DATA·02,28,06,3E,07,CD,5A,BB,C9,DD,
     46,01,DD,4E,00,DD
LAKP 190·DATA·66,03,DD,6E,02,F3,08,F5,CD,BF,
     BE,F1,08,FB,C9,09
LACM 200·DATA·2B,56,2B,5E,2B,7E,08,2B,7E,2B,
     0B,0B,0B,0B,BE,28
LAIN 210·DATA·06,ED,A8,EA,CE,BE,C9,08,2B,BE,
     28,04,23,08,18,F1
LADL 220·DATA·F5,C5,2B,7E,2B,46,2B,12,1B,10,
     FC,C1,0B,0B,0B,0B
LAIC 230·DATA·78,B1,28,04,F1,08,18,D6,F1,C9,
     00,00,00,00,00,00
HADH 240·chk=0:FOR·x=&BE80·TO·&BEF9
FAOJ 250·READ·a$:a=VAL("&"+a$)
HAEP 260·POKE·x,a:chk=chk+a:NEXT
LAFF 270·IF·chk<>&32DB·THEN·PRINT"Error·!!":
     STOP
DALA 280·CALL·&BE80
OAOK 290·CLS:PRINT"Insert·Disc·with·AA26·fil
     es·on·...."
NANP 300·PRINT:PRINT·"Please·Press·A·Key·...
     .":CALL·&BB18
MAHF 310·MEMORY·&2FFF:LOAD"5.BIN",&3000:|DEC
     ODE,&3000,&3247
LAML 320·RESTORE·350:ck=0:FOR·x=&2000·TO·&20
     0C:READ·a$
KAIE 330·a=VAL("&"+a$):POKE·x,a:ck=ck+a:NEXT
JACB 340·IF·ck<>&4E0·THEN·360·ELSE·CALL·&2000
JAOO 350·DATA·3E,39,32,3E,7B,3E,7B,32,3F,7B,
     CD,91,7B
GAHL 360·PRINT·"Error·!!!":STOP
```

Multiface Pokes

7B3E,39 then	
7B3F,7B	Infinite Time

Poking the multiface way

1 Load the game as normal.
2 Press the RED button on the MULTIFACE.
3 Press 'T' for tool.
4 Press '*' to make sure you select the code.
5 Press 'H' for HEXADECIMAL input.
6 Press 'SPACE' for input.
7 Type in the ADDRESS (ie, 3A7C)
8 Type in the POKE (ie, A7)
9 Press 'RETURN'
10 If there is more than one poke go back to 7.
11 Press 'ESC' back to the menu.
12 Press 'R' to return to the game.

The Examiner

Get a life. Life's an adventure. Therefore, thus, hence, ipso facto, ergo, get an adventure, QED, Horizon, Huxley Pig, Tomorrow's World. Debby Howard rounds up this month's adventuring news, reviews, tips, etc, and so forth, ad infinitum...

The Staff of Power

£4.00p CPM+ and CPM 2.2 Disk Only. The Adventure Workshop, 36 Grasmere Road, Royton, Oldham OL2 6SR. Cheques or POs made payable to: PM Reynolds.

Many years ago, when Arcon became King, the Gods gave him a Staff Of Power. It was filled with strong magic for good or evil but King Arcon has always used it for honest purposes and has been a wise and just ruler. But one day, in the guise of a beggar seeking justice from the King, the evil magician Zyx swiped the Staff from the King's hands. Immediately, Zyx revealed himself in his true form, cursed the King for his goodness and vowed to destroy the kingdom.

You have been chosen to regain the Staff and destroy Zyx but first you must find four magical weapons; a sword, shield, ring and warhorn. In this adventure be prepared for the unexpected and for illusions. There is a limit of 400 moves, by which time you must have returned the Staff to King Arcon otherwise Zyx will use the Staff to take over the world.

This is a great little adventure, with a decent intro and good instructions. It also features RAMSAVE and RAMLOAD and you can be RESURRECTED if you accidentally get killed. The parser was reasonably friendly and you can always type in VOCAB for inspiration if you're stuck. Also LOOK IN, ON, UNDER and BEHIND are supported.

It's not always immediately clear what you're supposed to do but a careful read of the location text will assist you there. The puzzles start pretty easy and gradually became more complicated. There was a puzzle near the end of the adventure which I reckon might be too difficult for the average adventurer, but feel free to prove me wrong. Most of the puzzles can be overcome by careful examination of the objects you pick up along the way but there are some red herrings to throw you off the scent.

The only drawback I found was that I needed to use the RAMSAVE facility occasionally because at certain points of the game you are only allowed so many moves to overcome a problem. If you loath mazes then you'll love this adventure, because there aren't any. Be careful not to use the UNLOCK DOOR spell too soon, you won't need it until much later.

Staff of Power will keep you busy for some time, so don't think that you're in for an easy ride. Keep your cool, and remember most of the puzzles are logical, even though it will have you pulling out your hair a few times. Well worth the asking price, and I look forward to reviewing Sue Medley's other adventure, *Oklib's Revenge*, when it becomes available.

82%

Profile: Joan Pancott

If the history of adventuring was written down and passed along the passages of time through successive generations, one person would stand out among the brave and courageous explorers that seek the eternal challenge to play and complete adventures.

Joan Pancott has become a household name (*er, in whose house exactly? – Dave*) (*Dave, I'd be very careful poking fun at 'The Pancott' if I were you – Simon*) for all the work that she's done for fellow adventurers. In fact, as far back as issue 3 of *AA* she was offering help and since issue 8 Joan has featured as one the Lords and Ladies of Adventuring. Indeed, she was the first ever Lady of Adventure. Joan proudly admits that she has been playing adventures for over nine years now and has always stayed faithful to the Amstrad.

It's a man's world

Originally, Joan started off giving telephone and postal help using both her and her husband's initials, mainly because in those early days, the world wasn't ready to accept that women could be any good at computer games (the male half of the world, anyway). This was because frequently, whenever someone phoned up for adventure help, as soon as they found out that JG Pancott was, in fact, a woman they'd want to phone back later and speak to her husband, who wasn't actually much of an adventure fan.

But Joan soon proved those sexists wrong, came out of the closet and proudly declared her womanhood to the adventuring world. To date Joan has managed to complete a massive 155 adventure games.

Joan has several favourite adventures, but she says that she will always have a soft spot for Level 9's *Return To Eden* because it was the first one she completed. Since then she has managed to log up an impressive list and has remained one of the most frequent and reliable adventurers on the Amstrad.

By the end of July this year Joan had given out 9,818 tips, 535 in reply to letters requesting help (*you mean she's been keeping count? – Dave*) (*Dave, bear in mind that this woman is head of the CPC adventure Mafia. She is The Godmother – Simon*).

By the time Joan retired her main ambition, so far as adventures were concerned, was to run her own software company dealing solely in adventures, and that's exactly what she did. It was named WoW Software, WoW being the initials for Witch of Wessex, her nickname (most keen adventurers have some form of nickname). At that particular time the big software houses had deserted the Amstrad for the 16-bit market and it was impossible to get hold of new adventures. Those that had been previously available were retailing at anything from £10 to £30. Joan started selling hers at around £2 for tape adventures and £4 for disk ones. This made adventures available to everybody.

Since then Joan has gone from strength to strength still helping where she can and continuing to promote adventures. In fact, Joan has been given several awards at the annual adventurers convention:

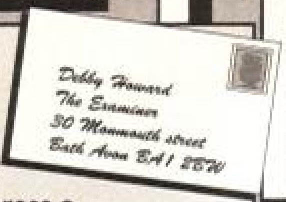
- The most helpful adventurer 1990 – 1st, 1991 – 3rd, 1992 – 1st.
- 3rd most helpful software company 1991.
- Honourable member of *Adventure Probe*, '91.
- Best home-grown adventure company '92.

Through this all Joan has been suffering from arthritis and is in constant pain, but still strives to give her best. This is one Lady of Adventure that deserves the deepest respect, loyalty and admiration from adventurers everywhere. (*Hang on, this is beginning to sound like an obituary – Dave.*) (*You're the one who'll be sleeping with the fishes after comments like that – Simon.*)

Expert advice

And the last word from Joan: "If you write to any helpliner please don't forget to include a stamped self-addressed envelope. Also let them know exactly where you're stuck, don't just say that you're stuck in so-and-so adventure, please can you help? If you're going to phone me, write down all the details you want to give me, and don't forget to write down my reply to your questions; this will save us both a great amount of time". (*Wait a minute, Andy, that isn't Joan's profile in the background – Simon.*) (*We didn't have her picture. No one'll notice, will they? – Andy.*) (*That's it – I'm going in to hiding – Simon.*)

Letters



Near the end of the adventure *Eve Of Shadows* you come across a boulder. I can't seem to move it or do anything else to it. Could you please tell me what to do?
A Dodd, Birmingham.

The boulder in Eve Of Shadows is a red herring, just ignore it! **Debby**



In Infocom's *Aftershock* I can't get out of the building at beginning of the adventure, and I can't even get the lift to work.
Stuart Scott, Devon.

Get the chair from the start location, take it to the lift, drop it inside and then you can stand on the chair. When you've done this examine the ceiling of the lift, remove the panel that you find there, climb out of the lift and the rest is up to you. **Debby**



I've heard a rumour that Simon Avery has decided not to write any more adventures. I have loved all the Public Domain adventures he's done and I am getting worried the rumour might be true.
Robert Chesterman, Norwich.

Well the rumour is partly true – Simon is not writing any more adventures for the CPC, but he is continuing on the PC side of things. But if you've loved his PD adventures then get in touch with WoW software; they have quite a few of Simon's commercial games for sale. **Debby**

Give us a clue

If you'd like to help fellow adventurers out of a jam, please send in your tips and hints for any adventures you've played. Thanks to Bill Jenkins from Northumberland for this month's advice.

Get in print

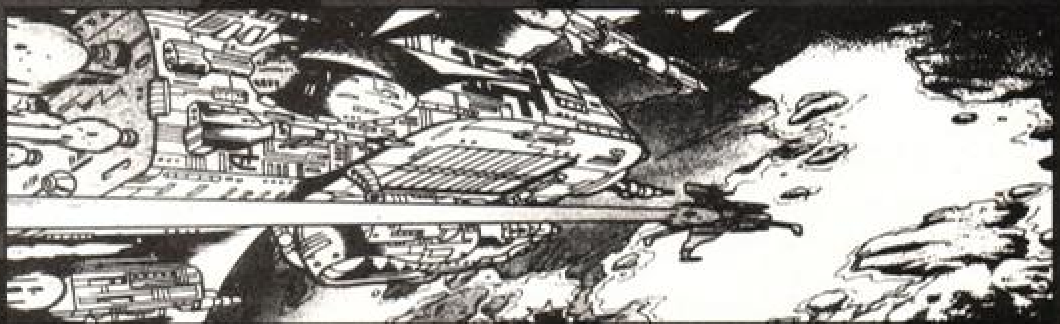
All adventuring-type correspondence should be sent by her majesty's finest postal service to:
The Examiner,
Amstrad Action,
30 Monmouth Street,
Bath, Avon BA1 2BW.

Marsport

- The geranium from the hothouse is the key to the plant room on Joly "H".
- The dough from bakery is the key to the banker's room on Byer "E".
- The cornet from the ice cream room is the key to the music room on Farr "A".
- The dias from the oratory and the lute from the music room factor a lead suit for the radiation room at Byer "A".
- The boots from the safety room are the key to chemist at Dalt "C".
- The earmuffs are for use in the danger room on Gill "B".
- Oxygen from the chemist and the empty tank factor an air tank for the danger room on Coma "A".
- BEWARE, carrying either the helmet or the toupee activates all Heralds.
- Valium from the chemist is the key for the danger room on Byer "E".
- The Mars map from the map room is the key to the bar at Farr "E".
- The tea, the syringe, the insect and the pointe factor an antidote for the danger room on Coma "E".
- FIVE KEYS FOR ENTRY

Factor Mute and Manifesto to make	E token.
Factor Strainer and Sunchart to make	N token.
Factor Charcoal and Projector for	T token.
Factor Lead Suit and Cake for	R token.
Factor Earmuffs and Eyeshield for	Y token.

Note: You must make the Cake, Lead Suit and Eyeshield as before – don't remove them from



the danger rooms or you could be in trouble.

- The calculators and steps factor a game which is the key to games room on Farr "G".
- The keys to M-Central – Key One is for the keypoint in the control room at Hale "A". Key Two is for the keypoint to the left of M-Central door. Key Three is for the keypoint at the right of the door.
- When all of this has been done, go into M-Central and read both Vidtex's. Part one of the game is now complete.
- The kettle is the key for the boiler room on Joly "I".
- The helmet and the toupee factor an artifact.
- Factor the gun and the artifact to make a Hypergun. Warlords can now be destroyed.
- Now factor the five tokens to make the KEY to the Sanctum. Place the key in the keypoint inside the Sanctum and obey the Vidtex. Part 2 is now complete.

EIGHT FROM TEN MAKE YOU A BIGHEAD:
Byer = H codex.
Iaxa = D codex.
Gill = 6 codex.
Hale = G codex.
Elis = U codex.
Alba = N codex.
Daly = W codex.

HD 6 Gun West. Go to passage HD6 on Hale. Just inside the passage, stand facing the wall at HD 2. Make sure your gun is fully loaded then fire continually until the screen flashes. You will now find a new tube on HD 2.

Return to the lab. Save the game in case of accidents, then take the plans, use the tube that you have just made to go up to Coma, then go out through the Spacefield door.

Lords & Ladies of Adventure



If you're stuck on any of the games listed below, there's someone somewhere willing to help you out. And, freakily, that very someone's name and address is listed below, too – strange coincidence or what? Don't ponder on it, just take advantage of it. Please remember to enclose an SAE with your enquiry and DON'T ask for a full solution, as you might be disappointed.

- Almost any Amstrad adventure you could name – Joan Pancott (*hey, isn't she the one who...? – Dave*) (*Zip it, Dave – Simon*) ☎ 0305 784155 between 1pm and 10pm.
- *Adult 2, Can I Cheat Death?, Dungeon, Firestone, Jason and The Argonauts, Spacy, Tizpan, Welladay* – Stuart Mainland, 2 Douglas Road, Coylton, Ayr, KA6 6JJ.
- *Avon, Forest At World's End, Hollywood Hyjinx, Kobyashi Naru, Mordon's Quest, Scapeghost* – Angela Allum, 22 Point Royal, Bracknell, RG12 7HH.
- Believe it or not you too could become a Lord or Lady, and you don't even have to spend years on the back bench in the House of Commons, suddenly become a pain in the government's side and be given a knighthood so they can boot you into the House of Lords where you can't do any harm. It's much simpler than that. If you know an adventure inside out and want to inflate your ego by having lesser mortals beg for your help with that adventure, just write to *The Examiner* telling us your name, address and the name of the adventure at which you're an expert. It could change your life (though probably not).

Where To Go!

Get a load of this – if you send a stamped self-addressed envelope to any of the following addresses, within a few days you will receive a catalogue of all the adventures, new and re-released, that they've got in stock. And then you'll be able to order the ones you want.
What a truly amazing concept.

- WoW Software, 78 Radipole Lane, Weymouth, Dorset, DT4 9RS.
- The Adventure Workshop, 36 Grasmere Road, Royton, Oldham, OL2 6SR.

Public Image

Because you demanded it (now don't argue), Tim Blackbond's personal pick of the PD libraries.

AMSOF PD

Librarian: Derek Hyland, Lissanly, Cloyne, Middleton, Ireland
Price: 25p per 178K. Disks only.

Interesting fact no. 2341: Amsof PD was (and, strangely, still is) Ireland's first PD library. Derek Hyland makes a name for himself by importing software from his thousands of contacts in Europe. A large range of European software is available along with the usual British stuff.

AMSTRAD FUN PD

Librarian: Keith Woods, 8 Springfield Drive, Templeogue, Dublin.
Price: 50p per 178K. Disks only.

The other Irish library, this one affiliated to the fanzine *Amstrad Fun*, AFPD claims to be the only library to have quality as a stated aim. Admittedly the small range of software is of high standard (if you take high standard as meaning 'not small 2K BASIC programs'), but it certainly isn't the ONLY 'top quality software only guaranteed' library.

DARTSMA PD

Librarian: Adam Shade, 47 Kidd Place, Charlton, London SE7 8HF
Price: 50p per 178K. Disks only.

You may have seen the adverts in *AA* and wondered, "I thought PD libraries weren't meant to make a profit." The truth is, Adam does make a profit, but not out of the PD side of things. As well as a large catalogue of software, he does the odd bit of hardware type-stuff on the side. Mr Shade has a reputation for slow turn-around time, so check your patience before ordering.

DEMON PD

Librarian: David Long, 47 Hillton Avenue, Hall Green, Birmingham, West Midlands B28 OPE
Price: 50p per 178k. Disk only.

David Long has been around the PD scene for some years and not only has he managed to scrape up a fair few disks (a massive 80Mb of the stuff), but he runs a small monthly newsletter dedicated to his library. Not bad at all.
3.5-INCH DRIVE OWNERS: David has a special set of ROMDOS compilations which feature no less than four sides of software on each.

GD PD

Librarians: Dave and Ged Lawson, 49 Woodville, Barnstaple, North Devon, EX31 2HL
Price: 50p per 178k. Disk only.

GD PD is relatively new, but has already made a name for itself by importing software from as far away as Australia. The catalogue is reasonably large, providing a wide choice for even the fussiest consumer.

PD FUN

Librarian: Simon Walker, 41 Michealgate, Kirkby Lonsdale, Via Carnforth, Lancs LA6 2BE. Price: 50p per 178K. Disk only.

PD Fun deals only in games, demos, adventures... anything EXCEPT those oh-so-boring utilities. Simon has opted for quality over quantity. For example, each disk devotes 1K to a menu system and the other 177K to software. You will not find one free byte anywhere on the disk! Wow!
3.5-inch DRIVE OWNERS: PD Fun uses the side switch to give two sides of DATA format PD.

WACCI TAPE LIBRARY

Librarian: Arthur Cooke, Brympton Cottage, Brunswick Road, Worthing, Sussex BN11 3NQ.

Yes, WACCI has also got a tape library. There aren't many places where your average 464 owner can get in on the fun of PD, but this is one of the best.

PRESTO PD

Librarian: Matt Gullam, 119 Pwll Street, Landore, Swansea, West Glamorgan, SA1 2PB.
Price: 50p per 178K. Disk only.

The only library to be named after an album by Rush (but don't hold that against it), Presto PD was also the first library to offer a complete no-fuss guarantee that every selection contains only the highest quality of PD available. One of the top three libraries on the CPC at the moment (but with an annoying habit of changing address every few months).
3.5-INCH DRIVE OWNERS: Software can be offered for people with side switches (given as two sides formatted to 178K). Presto is also the only library to offer PD on 5.25-inch disks.

ROBOT PD

Librarian: Richard Fairhurst
2 Trent Road, Oakham, Rutland, LE15 6HF
Price: 45p per 356K. Disks only.

STOP! Robot PD (which is normally run by *AA*'s very own Techy Forum impresario Richard Fairhurst) is still closed for business at the moment, but don't panic, it will be reopening soon. So don't send any orders to Robot PD until further notice – it's pretty pointless, frankly.

SHEEPSOFT

Librarian: Paul Fairman, 39 Woodlands Road, Barry, Wales CF6 6EF
Price: 20p per 178K.

Since opening, Sheepsoft has held the accolade of being the cheapest library in Britain! Paul also offers his special CP/M collection containing the VDE word-processor for no more than the price of a postage stamp. With well over 100 sides of software, Sheepsoft is a great library for those who think even PD is a money-eating business.

SIGNAL SOFTWARE

Librarian: Matthew Harris, 83 Longleat, Great Barr, Birmingham, B43. Price: £1.00 copy charge.

The most flexible library in the known galaxy (probably)! Matthew provides software on 3-inch and 3.5-inch disks as well as cassettes! Yes, I said cassettes. What next? PD on CD? (It does have a certain ring to it, don't you think?) It's just a shame about the price, which is quite steep for us money-grabbing, mean PD buyers...

UAUG disk LIBRARY

Librarian: Richard Sergeant, 67 Nursery Fields, Hythe, Kent CT21 4DS. Price: 50p per 178K.

Another library that was spawned from a fanzine, this time *CPC User* from the UAUG. You must be a member of the user group before you can start ordering software, and for just a tiny £8 a year, can you afford to miss out? You'll gain access to a large library packed with everything that the average CPC user would ever need, including the odd exclusive program. Yip-yip coyote!

UAUG TAPE LIBRARY

Librarian: Richard Duggan, Flat 15, Hughenden Court, Mount Pleasant Road, Hastings TN34 3ST. Price: FREE.

Free, eh? That's a jolly good bargain! Like with the disk library, you must be a member of the UAUG first to order stuff. If you are, you have access to mountains of tape-compatible PD. The only requirement is that you send a good quality 60-minute cassette. Incidentally, is there any town in Britain that hasn't got a Mount Pleasant in it?

WACCI disk LIBRARY

Librarian: Clive Ballaby, 12 Trafalgar Terrace, Long Eaton, Nottingham, HG10 1GP. Price: £3.00 (including disk).

Since opening several millennia ago, WACCI has established itself as one the biggest CPC user groups in Britain. As well as having several disks of PD software, there's also some excellent homegrown software. Worth checking out, even though the price is a bit steep.

Galactic Warfare

The war had been raging for centuries, covering several galaxies, destroying thousands of planets, with neither side gaining the upper hand. Finally the two sides' leaders met to talk peace. Dave was there to report on this historic event.

They glowered at each other across the table. The negotiations were not going well. Major Wyt'owz of the Ve'elay ground his teeth. Commander T'Gore of the Pe'emarycy finally lost his patience.

"A stalemate this war has reached," roared the Pe'emarcian, unaware that his English teacher wasn't all she was cracked up to be. "We need to find another way to settle this dispute."

"Like what?"

"Er... well, er..."

It was at this precise minute that an amazing coincidence occurred. A rip in the fabric of time and space opened above the conference table and something strange fell out.

Luckily, the Pe'ermarcian had studied 20th century Earth culture and recognised the something thing as a



The Worlds at War scenario: a missile silo has been selected in the Fire Phase. The ranges of its weapons have been highlighted.

CPC464. Even luckier, the computer was still working, though it wasn't plugged in. "Must be some residual energy from the time/space continuum," mused Commander T'Gore (look – I did say it was an amazing co-incidence).

"A two-player strategy war game called *Galactic Warfare* it appears to be running," said the Commander. "Just what we need this could be."

"It sure is. I'm a dab hand at strategy games I could have you at this game any day," taunted the Ve'elayan Major.



The selected tank can move 12 places, but the terrain has a resistance of 3 so the tank can only move 4 spaces (12/3 = 4).

"Then settled it is. Whoever wins the game the war will he win too."

Their first problem was trying to work out how to play the game. The instruction manual had fallen through the rip in the time continuum as well, but it wasn't much help, as it seemed to miss out half the operations, but at least it explained the plot and general aims of the game; two warring factions in space, both out to obliterate the other. "No matter," said Wyt'owz. "I'm sure we'll pick it up as we go along."

The game was divided into phases each containing six turns; each player had one turn to move and two turns to fire per phase. Another slight delay occurred when T'Gore realised there were two scenarios from which to choose, and the two leaders couldn't decide which one to play, but the dispute was settled by flipping a coin (is there a moral in there somewhere?).

"Aren't up to much, the graphics, are they?" Complained T'Gore. "Which ships are mine is hard



To select a ship or regiment you position the cursor over it. A menu of options or weapons then appears in the left window.



You don't automatically know where your opponent's ships are. You've got to find out without getting blown up yourself.

to tell. And ages it takes to give all your commands to your ships."

"Ah, but it is a very complex game, and there is a lot to think about, more than just firing senselessly at each other. You have to plan ahead, manoeuvre troops, send out scout ships. Like in this real war, neither of us can be sure where the other's ships are lurking."

"I do if at the screen I look while you your turn are taking."

"But that's cheating!"

"Yes, and I am supposed to do what while you faff about for half an hour doing all your firing and moving about? Dull it is."

"Try and get into the spirit of it. It's a game for testing your analytical mind, not your reflexes."

"But too complex and fiddly the controls are. Bothered I cannot be."

"So we are going back on the deal?"

"No finish the game I will."

Five days later – because they could save the game on to a disk when they need a break (which in T'Gore's case was often) – the game was finally completed, T'Gore victorious.

"Best of three?" suggested Wyt'owz, who, despite losing, had been rather enjoying the game.

T'Gore, who hadn't, shot him in the head and left. **Dave**

VERDICT

GRAPHICS 50%
It's all a bit pastel-shadey and not always very clear. Should be bolder.

SONICS 30%
Minimalist. The occasional 'donk!' and that's about your lot.

GRAB FACTOR 48%
Difficult to get to grips with and frankly not very exciting.

STAYING POWER 64%
But if you like this sort of thing it does eventually deliver the goods.

You'd have to be a serious strategy head to enjoy this. If you are, it's a meaty, complex game with a lot to think about, but it's too unfriendly to appeal to the unconverted.

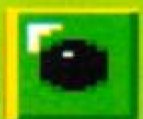
RATING 58%

Ball Bearing

£3.99 ■ Cass ■ £5.99 ■ Disk ■ Radical Software ■ 081 856 8402

Simon Forrester says, "Remember kids, unoriginal game ideas can be fun," (rather unconvincingly) and bears down on yet another game review...

Don't think I'm getting soft or anything, but I always hate starting a game review with a gripe (actually, that's not exactly true, but cut me some slack here, will you?). Today Simon Forrester's hate mission is about public domain software. As well as getting some absolutely useless PD programmers writing disks full of utterly nob software, you'll see quite a lot of wonderfully programmed games and utilities, all with one flaw – the PD game scene is based almost solely on unimaginative people ripping off commercial ideas and thinking they're some kind of subversive movement against professional software (then they write letters to *Amstrad Action* complaining that the scene is dying).



But now we have *Ball Bearing* to prove that plagiarism can work both ways. *Ball Bearing* is modelled exactly on an older French PD game called *Croco Magneto*, one of those rare PD gems that was actually original (and actually quite good fun). And when I say exactly, I'm not talking about any 'what a massive coincidence' type of thing – they're virtually identical.

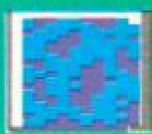
Which rather seems to beg one important question – why should we be expected to pay money for something we can get for free (in the form of *Croco Magneto*)?

Anyway, the odds are you'll want to know what the game's about, so here goes. You control a ball bearing that bounces around a strange and hostile terrain, the aim being to get through various levels by collecting gold rings.

Along your way, you'll come up against loads of different meanies, such as plants that sap your energy, vines that sap your energy, spikes that sap your energy and loads of other things that sap your energy. Energy sapping isn't all that goes on. There are also obstacles that punish you with things like reverse gravity, slow motion and other weird controls, plus a shield and an ice-pick-type thang, both of which you can pick up to make life easier. But that's your lot.

Graphically, *Ball Bearing* is moderately impressive – everything is reasonably drawn, and scenery blends in nicely. The only slight problems come with the animation – the scrolling really isn't the smoothest I've seen, and quite frankly, what little movement there is doesn't exactly look all that convincing.

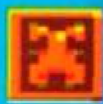
Sonics next, and a tune that is one of the most simplistic, rattling little pieces of muzak I've ever had the misfortune to hear. The in-game effects don't really add much either, but they are a little less punishing on the ear.



Grab factor and gameplay? The initial attraction of this kind of game is always pretty high, but the gameplay is just a little too shallow for my liking.

I'm disappointed. Yes, it's a reasonable game, but it's based on a the same concept that made for a fairly decent PD game; and that's the problem. It just doesn't have enough meat to warrant being a full-sized commercial game.

So while on the one hand it's fairly well-programmed and moderately entertaining, once you learn the enthusiasm-draining truth about its predecessor – which is free and only very slightly inferior – you feel you're being ripped off. Sorry, Radical, this is not the way to help the CPC scene and frankly I feel like I'm being patronised. **Simon**





I once wrote the 'Rocky Horror Picture Show', you know... Mumsy mumsy, patronise, run around and shove my face in the camera...



Okay teams, we're in the Aztec zone, and the task for this room is to write a game with a vaguely original concept. You've got three years, and the penalty's a bad mark.



"I can't see what I'm supposed to do! I can see a PD game here, shall I just try to copy that?"

Buying Bearing

You can buy a copy of *Ball Bearing* from Radical Software at 57 Lebrun Square, Kidbrooke, London, SE3 9NS. If you want to phone, the number is 081 856 8402. You'll have to pay £3.99 for a tape version, and £5.99 for it on disk.

Alternatively, you can find *Croco Magneto* from most PD libraries for about 50p (copying charge).

VERDICT

GRAPHICS 65%
Looks moderately okay, but the scrolling and animation isn't too hot.

SONICS 60%
Awful title tune. Tedious in-game effects. Turn it down throughout.

GRAB FACTOR 80%
Your initial reaction to the game will probably be fairly good...

STAYING POWER 60%
But when you realise what's going on you'll be disappointed.

Reasonable individual scores but a low final mark. Why? Because you should really order *Croco Magneto* from a PD library instead.

RATING 40%

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Next Month

On the covertape – The Blues Brothers

Complete five-level game extravaganza. Don't miss it!



Encyclopedia Amstradica

Starting next issue – an A to Z of all things CPC. From the serious to the really not very serious at all, taking in the almost serious and the seriously unserious along the way.



And all this other stuff as well...

- Sentinel Software get the AA interview treatment (and hopefully don't split up half-way through)
- Our cart games and budget round-ups continue marching resolutely onwards.
- Adventures, Public Image, Cheat Mode and all the other regular features (which kinda makes sense)
- News of another special covertape for issue 98.

It's going to be a mighty issue, so order your copy now.

Win tickets to the FES and preview screenings of Walt Disney's Aladdin

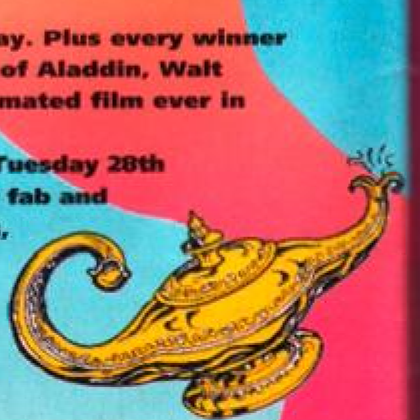


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- **The national games championships will be held there.**
- **Writers from all Future's computer games mags will be wandering around.**
- **It's going to be simply great, mates.**

And we're giving away 10 pairs of tickets for the Friday. Plus every winner will also get a pair of tickets to see a special preview of Aladdin, Walt Disney's latest smash (in fact, the largest-grossing animated film ever in America) on Sunday 21st November*.

All you have to do is ring 0225 442244, ext 2145 on Tuesday 28th September, ask for Dave and say, "AA is a really rather fab and groovy magazine." If you're amongst the first 10 callers, then the prizes are yours. Hoorah!



* Future, unfortunately, cannot pay for transportation to and from the venues. Aladdin will be shown at a number of cinemas up and down the country.

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